THE LANCET.

Vol. I.] LONDON, SATURDAY, NOVEMBER 2, 1833. [1833-34.

UNIVERSITY OF LONDON.

LECTURES

ON

COMPARATIVE ANATOMY AND ANIMAL PHYSIOLOGY,

DELIVERED BY

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LECTURE IV.

ON THE CLASSIFICATION OF THE ORGANS OF ANIMALS,

And on the Organs of Support in Animalcules and Peripherous Animals.

Before we commence with the first system which enters into the structure of the bodies of animals, I shall merely enumerate to you the order of succession in which we shall consider the whole of the various systems, that we may thus have as exact a method as can conveniently be followed in the study of objects so numerous and diversified; and possess every advantage which is to be derived from method and classification when considering a subject of so vast extent.

The organs of all animals, like the organs of man, have most frequently been divided into three great divisions; the one division comprehending the organs which tend to establish relations between the being itself and surrounding nature; the second division, embracing the means by which the individual is enabled to convert foreign matter into its own likeness; the third division, comprising not the mere relation of the animal to surrounding nature, or treating of its powers of nutrition and maintenance, but its adaptation to the continuance of its race.

The first division comprehends several systems, which you will observe are taken from the most perfect forms of organization; and it is convenient for us to follow as much as possible, a system which will embrace all the most complex as well as the simplest forms. We shall occasionally have to pass over whole tribes of animals in our considerations of the separate systems; and in treating of the whole range of animals, we shall have to omit various groups or genera when speaking of the different forms of organs. We shall find that all animals do not possess a complex machinery, but that the lowest are extremely simple. It would be inconsistent indeed with the nature of the developments we observe in the highest forms of animals, to find that the simplest possess all the same systems, in a similar but minuter condition. It was the opinion, in former times, that the minutest forms of animals contained all the systems of human organization reduced to extremely minute proportions. This opinion was the more plausible from its being observed that there were, indeed, animals of extreme minuteness, which required the microscope to examine their parts, but which yet possessed a nervous and vascular system, with all the more important systems which we find in human organization.

Now the first system which we have to consider among the organs of relation, is that which is destined to support and give form to the body, to protect the soft parts —the organs of support—the osseous system as it is termed when applied to man—to the mammalia, and to the vertebrated classes generally. But we shall find in the invertebrated classes, that the muscular system forms a connexion with parts not contained in the *interior* of the animal, but most frequently existing *outside* the body —covering the exterior surface. Under this system, therefore, the *osseous*—we have to consider the various forms of

shells, both of the molluscous classes and the articulated division of the animal kingdom,—the various forms of corals, and the other hard substances met with in the radiated animals, some on the exterior and some in the interior of the body,—all these we shall consider under the division of the *Organs of Support*.

When the skeleton is composed of several parts, we find them connected together by portions of a softer texture, parts more pliable, and denominated in the highest animals "ligaments." This epithet is applied to different parts of the skeletons which are not internal or belonging at all to the vertebrated form. We shall find that in the class *Zoophytes* there are parts (as in the specimens of *Isis* and *Corallina* I now show you) which are solid, and connected with each other by intervening pliable substances. We see an instance of this in the common *isis hippuris*. We find it even where the skeleton is external. We also find it in the bivalved molluscous animals. We see it in the articulated animals. The unconsolidated portion of integument serves to unite the different parts of their skeleton. In this class of organs are the active organs of motion, or the muscular system, which we have to examine, whether in the form of fibres or of a homogeneous substance. The organs of sensibility and motility are the nervous system. The organs of sensation are next to be examined—the organs of the senses — the apparatus placed at the extremity of the nerves, and which become less and less developed as we descend to the lower grades of animals,—these requiring less than the more elevated forms. The latter being more easily injured, from their greater degree of complexity, require increased means of protection, and thus have more fully-developed organs of sensation.

The second great system of organs is that of *nutrition*,—a system which is, of course, common to animals and plants; and, indeed, so characteristic is it of the vegetable kingdom, that it has been commonly denominated the system of vegetative life. We see that though plants have not brain, muscles, and bones, yet that they have the means of conveying foreign matter into their own bodies, through inert vessels; that they have a circulating system which is visible, that they have this even in the separate cells; that particles are moving in great rapidity round the interior of those cells; and that they have various other systems by which they are enabled to move and expand their parts, to follow the direction of the sun, and to contract those parts again at the setting of the sun, and that they have organs of respiration in the leaves. And this latter system, containing as it does the organs of nutrition, has been distinguished as especially characteristic of vegetable life.

In this division we shall have to distinguish the organs of *digestion*, the most general organs in the animal kingdom. All other organs we shall find to disappear till we have come to animals without any other organ than a common bag for digesting matter. The next system—the *chyliferous*—will confine us to a very few animals. The organs of *circulation* are much more widely extended through the scale. Here we shall find that fluids at first meander through the body without distinct vessels—that vessels at length are formed, and that a sanguiferous system is completed, by the formation of a heart to convey the blood to the different parts, and particularly in the higher grades, carrying it to the air-cells, when it is acted upon by the function of respiration, which brings the surrounding element more immediately in contact with the blood. Then we consider the organs of *secretion*—the various parts of the glandular apparatus, whether developed at the surface, or in the interior. The organs of *absorption*—the lymphatics, by which the decayed materials are conveyed to the blood to be removed from the body, and the organs of *excretion*, by which they are thrown out, whether by the secretion of urine or otherwise, are next in order. After this the *tegumentary* parts come to be considered, and these we shall find to be curiously connected with the habits of various animals,—that the feathers of birds, and the scales of reptiles, for example, are beautifully adapted to the whole internal systems. The feathers of birds constitute organs of progressive motion of great lightness. They are ordinary appendices, developed hairs, thus increased by the great extent of the respiration, but from their lightness, from their being, as it were, air-tubes of a strong structure, they are the best possible organs for that class of animals. The wings are better for birds than those of the bat would be. You observe also the strong muscles of the organs by means of which they fly. So in animals which swim. But cold-blooded animals do not require to be covered with a bad conductor of caloric, like down or hair. That would be superfluous. They do not incubate. Therefore, simple layers of scales are sufficient both for fishes and reptiles. The living habits of amphibious animals render the absence of hairs and scales best for them. Immersed in water for months together, and in mud, they

respire through the surface of their skin. They necessarily respire, when in a state of torpor under water, through the skin.

The last organs to be considered, are those by which the race is continued. The lowest tribes of animals present nothing more than the first element of the generative system, whether you consider all these tribes as females or not, the poriferous and the polypiferous animals have the means of continuing their species by the detachment of gelatinous parts of their bodies. No impregnation is required, but portions are simply detached which afterwards grow. Other animals are more complex, and require a passage for this ovum. Sometimes a further connexion with the body is formed, a sufficient process to induce the necessary development not having been undergone; and organs of excitement are necessary to enable the animals to complete the function. That addition, of course, exists in those instances in which we find the male and female separate. The male and the female, in all the higher forms of animals, are at first precisely the same, but they assume very different forms as they advance. The clitoris, for instance, shrinks in the one, and develops into a penis in the other. In the organs of impregnation and conception, therefore, we find a great resemblance indeed. Being at first the same, they continue essentially so, with the exception of the higher development of parts in the one case, and the retarded development of them in the other. These are organs for secreting, conveying, and maturing, the seminal fluid or the ovum, comprising also the organs of excitement.

There is a point of consideration which should be mentioned at the present moment. In treating of each of the several systems, I must either proceed from some portion of knowledge which you must be supposed already to possess, that is, from that structural form which is most nearly allied to the human frame (presuming you to have already an acquaintance with the human structure)—we must either proceed from that point as a standard of comparison, and then go progressively downwards through the class of quadrupeds, birds, reptiles, and fishes, to the forms which are more simple, thus gradually diminishing the complexity of the different systems; or we must take the opposite plan, that which nature adopts. Nature begins by simple forms. The animal kingdom itself began by the most simple forms, as is attested by what is found in the earth. Gradually it became more complex. That is attested alike by sacred and profane evidence. It accords with the sacred writings; it agrees with all the best facts drawn from the strata of the earth. Those beings which occur near the surface are of more complex structure, and man, whose remains have yet only been found in the newest strata, is the most complex of all. In the animal kingdom nature begins with the simplest forms: so again with plants. You find a little vesicle to be the nucleus of what is to be formed; but the stem is not commenced in the first instance. All systems of organs begin with their most elementary, their most essential parts, and we could arrive at the most essential parts of a system, either by tracing it downwards in the animal kingdom, or by tracing it backwards in the march of its development in higher animals, as we shall have ample opportunity of seeing in every system that will come under our notice.

Now it is more philosophical to commence with the simplest conditions of the systems, and mount upwards to their more complex forms. It is, perhaps, attended by some difficulties, as it leads the student early to consider forms of animals which are the least known, and to conditions of organization the most remote from the human frame, with which alone we suppose him to be acquainted. By proceeding from the most complex forms, however, we lose the order of development of the various systems, and are constantly restrained in our account of the development of organs; or we must continually suppose a previous knowledge of the simpler forms of animals, which have not been demonstrated. Nature in the formation of organic beings, and in the perfecting of individual organs, does not proceed by lopping off parts, but by superadding to the central element. She gradually superadds to her elements or organs, more and more complex parts. Hence I shall adopt the ascending order in treating of the various systems.

CLASSIFICATION OF THE ORGANS OF ANIMALS.

1. *Organs of Relation or of Animal Life.*

Organs of support	Osseous system.
Organs of connexion	Ligaments.
Organs of motion	Muscular system.
Organs of sensibility and motility	Nervous system.
Organs of sensation	Organs of the senses.

2. *Organs of Nutrition or of Vegetative Life.*

Organs of digestion	Alimentary canal.
Organs of chylification	Chyliferous system.
Organs of circulation	Sanguiferous system.
Organs of respiration	Lungs, branchiæ, cilia.
Organs of secretion	Glandular organs.
Organs of absorption	Lymphatic system.
Organs of excretion	Kidneys, skin.
Organs of tegumation	Tegumentary organs.

3. *Organs of Generation.*

Organs of impregnation	Male organs.
Organs of conception	Female organs.

ORGANS OF RELATION.

1. *The Osseous System.*

I commence with the organs of *relation*; and in considering this group of organs, I begin with the *osseous system*. This is far, however, from being the most important system among the organs of relation. The knowledge of the animal kingdom which we acquire by the study of the osseous system, is important in various points of view. It is important to the geologist, to the anatomist, to the physiologist, and to the naturalist. In tracing this system, we are carried down far in the scale. Were I to take the nervous system in this group of organs, I should not be led so low. By taking the osseous system, however, we are led from very low in the scale to almost all the higher forms of animals, and thus obtain the opportunity of becoming familiar with all the forms which are presented by the animal kingdom, a great advantage to us in commencing this study.

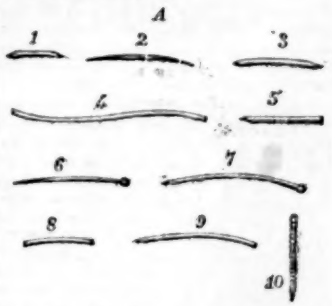
Now considering this system in an abstract point of view, we find it important in all forms of animals where it presents itself as a means of giving attachment to the organs of progressive motion, and as a means of giving protection to the more soft and delicate parts. We find, particularly in the lower animals, innumerable beings which are totally destitute of a skeleton; and from knowing that in the human being there originally is no skeleton, you would expect that to be the case. When all the parts of the human body are soft and gelatinous, there is no earthy skeleton, and often none until a pretty late period, when those parts which are to constitute the solid system have begun to be formed, but not begun to be consolidated by the phosphate of lime. So, in ascending through the skeletons of animals, we find that, originally, the animals are without skeletons. There is no proper skeleton in the entire class of animalcules called *polygastrica*; nor at first is there any in the higher classes, although afterwards they require some solid protecting shield to be thrown over their structure. Again, when we examine the skeleton in the vertebrated classes, we see its gradual development, from the soft and cartilaginous substance which first presents itself in fishes, through all its different stages, until we arrive at man himself. Now in the simplest form of animals—the polygastric, though there is no internal solid part which we can consider as a skeleton, nor any secretion of shell on the surface of the body; yet there are parts which we should not altogether omit when speaking of parts that are destined to give support.

You will here perceive that we have to use the term "skeleton" in a very extended sense, in order to embrace all the solid parts of the animals described. Some of the polygastric animals exude on their surface a secretion which agglutinates, lays hold of, foreign particles floating in the waters which surround them, and thus form for themselves a partial covering. The earthy matter, however, is not their own produce—is not due to their vital powers, but is an example of what we shall find to be very common in the class of worms which form for themselves an adventitious covering of foreign matter. There are, however, organs of progressive motion in these lower animals, and in which, as in this instance, the surface of the body is covered with minute vibratile cilia. These, you will observe by the magnified drawings before you, are disposed in regular series. Now in carrying the microscope over the surface of these minute polygastric animals, we find that they present a striated appearance, as if a network of vessels extended over a great part of their surface; and in some this covering appears extremely like vessels in which a homogeneous fluid is in motion, though no action of the vessels themselves is observable. You have that process going on, as in plants, without any visible active agent resulting from the contraction of fibres, because there is nothing of that kind in them. The striated surface

of the polygastric animals gives attachment to the cilia by which they move. These striæ form parts, therefore, which give support to the organs of progression, and may be seen here, in the *trichoda*, and some others. This structure is, however, exceedingly small, when compared with what we find in the *beroe*. In the beroe, a magnified figure of which is before you, you will find cilia disposed in eight regular longitudinal series; and in these very minute animals, which are about three quarters of an inch in length, you can see with the naked eye the tough bands on which the cilia are disposed. There is no skeleton composed of earthy matter in the class of polygastrica, though their surface is frequently more dense and loricated.

The next class of animals (for we have to stop but a short time at present upon the first class, as we shall have occasion to dwell more on the polygastric animals, when we come to consider their more complex structures, and the digestive organs to be found in them); the next class of animals, the *poriferous*, is one which presents various and remarkable forms in the skeleton. The poriferous is that class which comprehends all the spongy masses before you. In this class of animals the body consists of a cellular tissue, which is so extremely soft, and the globules or cells of which have so little connexion with each other, that when the living animal is torn, the fleshy substance runs down like oil from the lacerated parts. As in the common officinal sponge, when torn from the rocks at the bottom of the sea, these animals are found to have the fleshy substance of the body so soft, and so completely permeating the whole mass, that it runs down when lacerated like the white of an egg, or like oil. From this little connexion between the component parts of the fleshy substance of the body, and there being no irritability, you would scarcely expect those rapid motions which are seen to result from certain unknown actions which take place in them. The organs of support are formed of fasciculi and bundles of fibres. We find that no stimulus which has been employed in this class of animals has ever excited in them the slightest sign of irritability. Pressing them, burning them, tearing them,—nothing has ever excited so far as is known the least indication of irritability in their adult state. Now in this curious class of animals—the *poriferous* animals—we find that the simple gelatinous body is supported by a skeleton composed of different kinds of earth. In one great group the earth is silica; in another it is the carbonate of lime; in another it is a horny substance.

First, then, with regard to the siliceous skeleton of the poriferous animals. The *halinæ* I now place before you belong to this group; they are poriferous animals with a siliceous skeleton. This siliceous skeleton consists of minute spiculæ, (*A*, Figs. 1 to 10,) minute needle-shaped crystalline particles, which are transparent, and require the microscope in the examination of their form.



These spiculæ are grouped together into fasciculi, and these fasciculi are disposed in longitudinal series, so as to serve as a general framework for the whole animal. The fasciculi are disposed, also, in such a manner as to surround the pores by which the water enters into the interior of the body; they surround the canals through which the water passes when it has entered the body; they surround the large orifices through which the streams rush when water is to pass out from the body. These minute siliceous bodies are common to these animals with many forms of the raphides of plants; and, indeed, we are speaking of a form of animals which many naturalists in the present day are inclined to regard as plants. We see them, however, moving spontaneously in their embryo state—moving with great rapidity through the water, and, in their adult state, although we do not perceive the motion that causes the rapid currents of water, we see those currents rush through their bodies.

Now these minute spiculæ have regularly defined and even beautiful forms which are peculiar to each species. In some they present the form of short, straight, crystals, acuminating to a point at one extremity, and obtuse at the other; sometimes they are acuminated to a point at both extremities, sometimes they are slightly curved; but each form is indicative of a particular species. The animal

which I hold in my hand is the *halina panicea*. What you look upon is a mass of siliceous spiculæ, which, upon being thrown into muriatic acid, would be detached from the animal mass and collect at the bottom of the vessel; or if you were to use the blow-pipe, and burn off the animal matter, you would get the siliceous spiculæ alone (*A* 5). You can thus examine their form. They are of extreme minuteness, being scarcely the fifth part of a line in length; and when you examine them thus washed and cleaned, on a watch glass, with a light striking and shining obliquely upon them, they exhibit the sparkling appearance which results from facets of a crystal. It is therefore extremely probable that they actually are crystalline bodies in which the silica has assumed the same natural form that it assumes in inorganic substances,—the appearance of a six-sided prism, terminated by a six-sided pyramid. You have crystals of silica in nature, from these fine fibres of asbestos, which can be woven into cloth, to the largest masses of rock crystals, the one being as much crystallised silica as the other, the crystals, however, being so extremely fine in the asbestos, that it even exceeds in delicacy the spiculæ of which I am speaking. It is however an important fact, that when we have got to the lowest forms of animals (and this is common to them with plants), we observe that in the consolidation of the skeleton the earthy matter obeys the same laws, as far as we can discover, as in inorganic nature. The calcareous matter which consolidates the skeleton in the radiated and molluscous classes of animals has generally an obvious crystalline arrangement. It is asserted by Blainville in his lectures on physiology, that if you observe the manner in which one part of the phosphate of lime is united with another in human bones, you find the particles so arranged as to produce a crystalline arrangement—an arrangement which they obey in inorganic nature. We see nothing to contradict this; but there are so many counteracting agents influencing the complex forms of organization, that it is almost impossible to trace in them the laws of inorganic nature. The phenomena become so complex, the composition becomes so intricate, that it is difficult to trace the ordinary operations of physical laws so high in the scale. This, however, is not a sufficient reason for us to conclude, as many do in the present day, that the laws by which organic substances are governed, are something altogether different from the laws which regulate inorganic nature. Everywhere the natural philosopher and the chemist are making encroachments on the province of the physiologist. Everywhere do we find the laws of natural philosophy in operation in our bodies. Various physical instruments exist in animals;—acoustic instruments, pulleys, levers, hydraulic instruments, with all their valves, moving powers, fluids, &c.; but some philosophers are inclined to retard investigation, by assuming as a fundamental fact that the laws which govern organic and inorganic bodies are totally different, and even at variance with each other.

The forms of these minute siliceous spiculæ are important, should you ever come to study the natural history of the animals presenting them; should you ever devote yourselves to their study, you will find that these hard parts, regular and definite in their forms, present valuable characters for the discrimination of species. Here is the form of the *halina patera*, which I mentioned to you. Here is another extremely common species, which is found in the fresh waters around London—the *spongilla friabilis* of Lamarck. It differs from the *halina panicea*. It is acuminated to a point at both ends (*A* 1), the other form of halina panicea being acuminated only at one end. The large cup-like bodies—"Neptune's cups"—which you have seen in the *British Museum*, and in the *Zoological Society*—regularly-formed cups, three or four feet in height, and with a diameter sometimes of more than a foot—these are animals belonging to this group, and they have a skeleton composed of silica. The form of their spiculæ is that of a pin, with a head at one end, and a point at the other end (*A* 7). So that these minute spiculæ, requiring a microscope to see them, would, though brought at the point of a pin from the most remote part of the earth, serve to identify the animal to which they belonged.

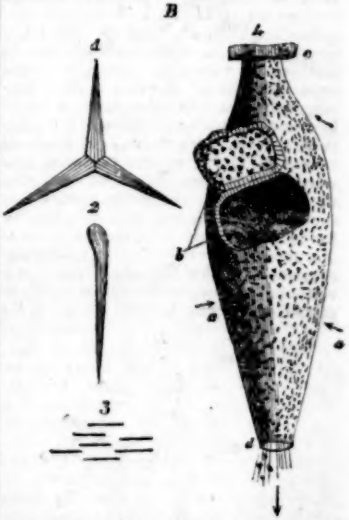
In another form of these animals, met with in the layers of oyster shells, the *cliona*, we find a spiculum approaching to that of the *halina patera*. It is in the form of a pin, having a head at one extremity and being pointed at the other. But in comparing the spiculum of this animal with the last, you perceive a striking difference. The one is cylindrical throughout; that of the cliona is fusiform in the middle, and tapering to the ends (*A* 6). These are, no doubt, minute differences, but when examined they serve as important characters in distinguishing the species.

Now the spiculæ which I have mentioned are connected and retained together in the form of groups or continuous fibres, by being held in aggregation by means of

a more condensed part of the general gelatinous substance of the body; so that although the gelatinous body itself has been removed from the spiculæ, yet you perceive that they do not fall down, that they are not detached from each other. A kind of cartilaginous substance embodies all the spiculæ and gives stability and a certain degree of flexibility to the whole mass. Now there are before you various forms which these siliceous skeletons assume. Sometimes the animals are branched, ramified, hanging from the under surface of rocks; sometimes they are in the form of cups, which generally hang from the rocks in the sea; sometimes in the form of encrusting masses over rocks, shells, or other submarine substances. You observe that these shells before you are covered with crusts composed of this material. From the one I now present to your view, the soft gelatinous part has been removed, and the silica, with the cartilaginous substance embodying it, only are left.

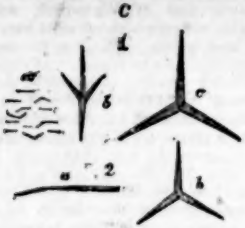
Now were we to refer the consideration of these substances to the geologist, we should furnish him with a curious subject for reflection. No fossil is more abundant in the chalk formations of England, and indeed in all countries where chalk occurs, than siliceous bodies of a bulbous irregular form, composing the chalk-flints. Those siliceous bodies have belonged to animals of the class of which I am now speaking, the poriferous animals. The pores you have almost lost sight of in the fossils, but you perceive the large orifices from which the currents of water before mentioned rushed. These bodies, although found fossilised in the carbonate of lime, are fossilised with siliceous matter, and they are converted into flints. Silica is found in the water which permeates the strata of chalk, and you know that every substance is soluble in water. Silica is soluble, though proportionally in small quantities. The waters containing the siliceous matter permeating the chalk strata for thousands of years, and coming through the strata of carbonate of lime, have no particular inducement to part with the siliceous matter like that which they have when the siliceous matter comes in contact with a nucleus of silica already existing there in the skeletons of poriphera. You will, perhaps, say that the *echinus* has no silica. But its intestines are filled with silica. Substances will adhere to particles of their own likeness. Siliceous particles will pass the carbonate of lime, but will attach themselves to siliceous particles. Thus, then, we find a reason for the abundance of those poriferous animals in chalk formations. It is owing to their siliceous nature, and that is the reason of their being converted into flints, which you know are siliceous matters.

Some of the poriferous animals have skeletons composed of the carbonate of lime, and all the known forms of the skeleton of the poriferous animals which are composed of the carbonate of lime, are composed likewise of spiculæ. I now place before you animals belonging to

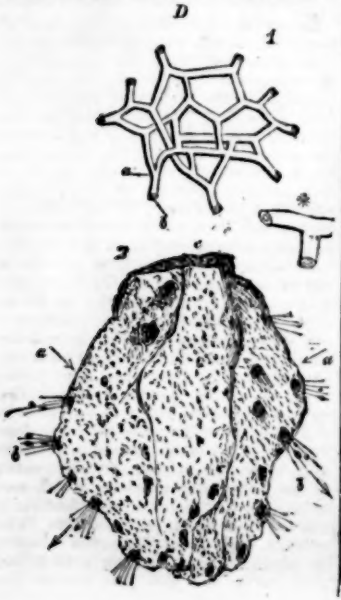


this group having a skeleton composed of carbonate of lime, and you see that in consequence they are white. This is the *leuconia nivea*, as I have called it. This is the *leuconia compressa* (*B* 4), and I believe that term has been adopted by Blainville. These forms possess the same simple gelatinous condition in their fleshy substance—have the same pores (*B* 4, *a a*) on their surface—have the same canals permeating them, and the same fecal orifices (*B* 4, *b*) from which the currents of water rush which pass through them (*B* 4, *d*). They are permeated in all directions by minute spiculæ of the carbonate of lime. These spiculæ of the carbonate of lime have different forms belonging to the same species. In all the known forms of these calcareous poriferous animals, a spiculum occurs, having a tri-radiate

form, such as that which I now place before you; a spiculum composed of three



rays, radiating at equal angles from a centre (*B* 1, *C* 1 *c*, 2 *b*). Now, that spiculum occurs in combination with other forms of spicula. Sometimes it occurs in combination with a spiculum of a clavate form (*B* 2); that is the case in the leuconia compressa. In other cases it occurs in connexion with a spiculum of a quadriradiate form, with four rays (*C* 1, *b*) instead of three; and other forms also present themselves, so that we must take all these spiculæ of each species into our consideration, and they afford as valuable a character for the distinction of the different species. These spiculæ are connected together like the silica, by enveloping cartilaginous substance. These calcareous spiculæ surround the pores, the



canals, the fecal orifices; they give stability to the whole texture of the body, and general form to each species.

There is another form of skeleton in this class of animals, which is very different from the others. It is that which we see in the *officinal sponge* (*D* 2). Here the spiculæ are composed of horny flexible substances, where there is neither silica nor carbonate of lime. The skeleton is composed of spiculæ of a horny substance, which run into each other, and form a horny network *D* 1, *a*) through the whole body of the animal. In the interior of these horny spicula there is the tubular cavity (*D* 1, *b**), which is common to them with the siliceous and calcareous spiculæ which I hold in my hand. These horny spiculæ unite and form fibres which surround the pores (*D* 2, *a*); they surround the orifices (*D* 2, *b*), and they give form and stability to the whole mass. They have, therefore, the same relation to these species as the calcareous and siliceous spiculæ which I have already mentioned.

I have said, that in the interior of these fibres, or horny spiculæ, there is a cavity. This cavity exists also in the siliceous form of the spiculum. It exists also in the calcareous form of the spiculum.

This detached spicular arrangement of the earthy or solid parts through the whole gelatinous or cellular tissue of the *poriphera*, reminds us of the first commencement of ossification in innumerable detached points of ossific matter, in the fœtus of man and all higher *vertebrata*.

Now these are the forms presented by the siliceous, calcareous, and horny skeletons of the poriferous animals—the three principal groups of this class, and you can judge of the substance which results from the union of all these minute spiculæ, and their grouping together to form a framework—a covering and scaffolding, for the whole body, from the numerous specimens of the animals before us.

To-morrow I proceed to the next class.

CASE OF

HÆMATEMESIS,

WITH REMARKS ON THE FUNCTION OF THE SPLEEN.

By FREDERICK CUMMING, *M.D., Dundee.*

HAVING read in the number of THE LANCET for 15th December, 1832, an account of a case of hæmatemesis treated in St. Bartholomew's Hospital by Dr. Latham, I am induced to transmit to the Editor the following account of a fatal case of that disease which occurred in my practice in June last, in the hope of its assisting the

profession in the search after the causes of so frequent and alarming a disorder.

Dundee, September 23, 1833.

CASE.

C. R., ætat. 42. His complexion is very sallow, he has for many years been subject to stomach complaints, and has been very sedentary in his habits till the last eighteen months. Has always been extremely sober and temperate. On the 20th of June, 1833, he was seized with vomiting, which continued frequently to recur till the 22nd at nine p.m., when by the advice of a neighbour, he took a common emetic powder, which was instantaneously rejected. The matter vomited, described as dark, bilious, and tasting bitter. I saw him first at ten p.m. The pulse was below 70, soft, regular, and of moderate strength; skin cool; breath natural; tongue white; no appetite; little or no thirst. He had felt cool during the last two days, but experienced no chills. Bowels natural. I did not see any of the matters which had been vomited. Medicine: saline effervescing draughts.

23. At midnight he vomited a considerable quantity of a black tar-like liquid, of a very disagreeable odour. It was immediately thrown away, but, from the description, I had no doubt it was blood. By that discharge he expressed himself as having been relieved of a weight which had formerly oppressed his stomach. He had some tenderness, on pressure, in the region of the liver, but had no other pain symptomatic of disease of the liver; skin warm and dry; tongue white; pulse 106, weaker. Complained of faintness; thirst increased; no evacuation from the bowels. A purgative medicine was ordered; but before any of it was given, he became suddenly much worse, a little after four p.m., having passed a quantity of blood by stool, and vomited a little. I saw him at six; he had voided by stool about three pounds of blood almost as black as tar, of a peculiarly strong and sickening fetor. The quantity vomited was about half an ounce. After this evacuation he fainted, and was with difficulty got into bed. At six p.m. he was excessively pale and faint, and about a minute after my arrival fell into a state of nearly entire syncope; the eyes were turned up, and the breathing was performed in a sobbing manner. By the usual means he was soon brought to a state of consciousness, but he remained pulseless, deadly pale, and weak to the last degree. When the pulse began to be distinctly felt at seven, I gave two grains and a half of *acetate of lead*, with gtts. 30 of *tincture of opium* in one ounce of cold water. I exposed his thorax and abdomen to the air, and sponged them freely (particularly the epigastric and hypochondriac regions) with cold water, which afforded him much relief, and which application he requested me frequently to repeat. At eight, the pulse being scarcely perceptible, the feet becoming cold, the pallor and extreme debility continuing, I applied bottles containing warm water to the hands and feet, and preserved the heat of the body.

At nine Mr. Thompson saw him with me, and we administered four grains of *acet. plumbi*, with gtts. 30 of *tinct. opii* given in water. The pulse becoming almost imperceptible, a small quantity of port wine in water was given. On returning before eleven I found the patient in syncope, into which he had fallen on raising himself. From this state he could not be recovered. In a quarter of an hour the symptoms of immediate death came on, and in five minutes he ceased to breathe. For some time before falling into this state of syncope, he complained of a desire to vomit, and said there was something in his throat which he could not bring up. He had no discharge from the bowels after half-past four o'clock. From six the pulse had been extremely feeble, frequently imperceptible, and seldom could it be counted.

Dissection Fifty-six Hours after Death.

On opening the abdomen, the whole of the viscera visible without disturbing the parts, presented a very dark appearance; in some places almost black. The cavity contained a few ounces of blood-tinged fluid. The liver was somewhat smaller than usual, of a pale yellow hue, firm at the edges, but, towards the centre, friable, the finger entering its substance by a very moderate pressure. The gall-bladder was full of green bile. No tubercles existed in the liver. The spleen occupied its usual position, but looked and felt like a bladder half filled with fluid, though it was not increased in size. On cutting into it, its substance was found reduced to a consistence like that of pus, which by a very slight pressure exuded, leaving very little more than the peritoneal covering. The colour of this fluid was of a light chocolate, as in Dr. Latham's case. The stomach contained about 2½ or 3 pounds of fluid blood, with some clots. The duodenum and jejunum were almost filled with blood, which also thickly coated all the rest of the intestinal canal, and had escaped after death in considerable quantity from the anus and mouth. The stomach being carefully washed, nearly its whole surface (but particularly the great curve, and that part nearest the

spleen) was of a purple red, which was occasioned by engorgement of, and extravasation into, the muscular coat, the others being, when separated, nearly as transparent as usual. Towards the pylorus the colour was only brownish, and the mucous coat was there considerably softened. At the pylorus and duodenum, the colour again became deep red, not altered by careful washing and steeping, the muscular coat being much injected. At this part of the bowels the colour was deepest, but it continued through the whole of the small intestines, and was not discernible in the large. No rupture of any particular vessel of importance could be detected; but at the part of the stomach nearest the spleen, a cluster of enlarged vessels was conspicuous, from which it was conjectured the principal effusion had taken place. The colour of the blood was venous though not very dark. The kidneys were of a pale yellow colour, the outer parts, when cut, being sufficiently firm; the inner portion soft, and of a fatty and brain-like appearance. The pancreas was of a pale whitish yellow, and its structure somewhat altered. The thorax well formed; the lungs healthy. The heart a little enlarged, and its parietes thinner than usual; its cavities contained some fibrinous coagula. The head was not examined. The dissection was made with the assistance of Messrs. Thompson and M'Kellar, who concur in this account of it.

Remarks.

The most important point in this case seems to me to be the state of the spleen. It is evident that its structure, and of course its function, was destroyed; and though we are not well acquainted with the use of this organ to the system, yet I think that the common opinion that it acts as a reservoir or diverticulum in receiving the blood not required by the stomach in the intervals of digestion, will warrant us in assigning the diseased state of the spleen as the principal, if not the only cause, of the hæmatemesis; and the facts of the case, on the other hand, seem to confirm this opinion of the function of the spleen. The extravasation of blood could not have taken place from any obstruction in the liver, as it was not in the least tuberculated or hardened, and the gall-bladder, full of healthy bile, attested the due performance of its function.

I would account for the discharge of blood as follows:—The spleen being disorganised, its function lost, its circulation much diminished and obstructed, if not entirely stopped, while the diameter of the cœliac artery remained undiminished, a greater quantity of blood would be impelled into the hepatic and gastric branches than formerly, and much more into those branches of the splenic itself, which are sent off from it before, or when entering the substance of that viscus. These branches are numerous,— the posterior gastrics to the posterior surface of the great left extremity of the stomach, the left gastro epiploic to the fundus or great arch, some smaller branches inosculating with the coronaries and the vasa brevia arising from the artery just as it enters the spleen and distributed to the fundus of the stomach. The pylorus and duodenum are supplied almost exclusively by branches of the gastric and hepatic. The greatly increased quantity of blood sent into those vessels, would distend them in a powerful degree, so as to cause them to pour out their blood from the delicate mucous surfaces on which their capillaries are distributed.

The situations mentioned in the account of the dissection, in which there was the most engorgement and infusion of blood, correspond with the distribution of those vessels into which an increased quantity of blood would be propelled in consequence of diminution or obstruction of circulation in the spleen; and this correspondence must accordingly strengthen the conclusion, that the extravasation of blood was the result of such a diversion of it into those vessels, caused by the diseased state of the spleen. During life there were no indications of splenitis. It was said that he had once vomited blood at the same time last year. I calculated that the whole quantity of blood poured out would amount to about eight pounds.

Graphic Illustrations of Abortion, and the Diseases of Menstruation, consisting of Fourteen Plates, representing Forty-five Specimens of Aborted Ova and Adventitious Productions of the Uterus, with Remarks, anatomical and physiological. By A. B. Granville, M.D., F.R.S. London, printed for the Author, and to be had of all Booksellers. 1833. Royal 4to. pp. 87.

In the month of May last we adverted, in a very brief notice, to the publication of this splendid work, and promised to present our readers with an analysis of a portion of its contents on another occasion. We now proceed to redeem our pledge.

In the *Philosophical Transactions* for 1832, Dr. Robert Lee published a paper "On the Structure of the Human Placenta, and its Connexion with the Uterus," in which were developed certain supposed novel views of the author, who came to the conclusion "that the human placenta does not consist of two parts, maternal and fœtal—that no cells exist in its substance—and that there is no connexion between the uterus and the placenta by large arteries and veins. The deciduous membrane being interposed between the umbilical vessels and the uterus, whatever changes take place in the fœtal blood, must result from the indirect exposure of this fluid as it circulates through the placenta, to the maternal blood flowing in the great uterine sinuses."

It must be fresh in the recollection of our readers, that the publication of this essay gave origin to a smart personal controversy, and subsequently to a paper war between Dr. Granville and Dr. Lee, in which the former contended that the opinions and statements of the latter were neither novel nor correct. That he had been anticipated, many years, by Professor Lauth of Strasburg, who denied the existence of cells in the placenta, and the transmission of fluid by means of decidual vessels from the uterus into that structure; and, further, that his conclusions were invalidated by the experiments of a hundred anatomists of great skill and veracity. In consequence of the interest excited by this controversy, Dr. Hugh Ley, of the Middlesex Hospital, carefully examined the womb of a pregnant woman who died of a diseased heart undelivered. The particulars of this examination obtained the advantage of publicity in this Journal, and the result appeared to be corroborative of the opinions of the Hunters and of Dr. Granville, for the injection proceeded freely, without any extravasation, from the uterus into the placenta.

Shortly after this experiment, a description of the Hunterian preparation, illustrative of this subject, was printed by Messrs. Stanley and Mayo, and this document also, on being rescued by us from oblivion, appeared, equally with the researches of Dr. Hugh Ley, to militate against the doctrines of Professor Lauth.

It would appear that Dr. Granville has been, for many years, engaged in investigations touching the physiology and pathology of abortion, and that his attention has necessarily been very much directed to the nature of the connexion between the placenta and the uterus as an important part of the subject, which he was anxious to elucidate. It must be confessed, that since the time of the Hunters, this physiological tract has been much neglected, if not entirely forsaken, by the anatomists of this country, for were the fact otherwise the statements of Professor Lauth could not have obtained such passive credence, and been so universally allowed, until their accuracy was publicly challenged by Dr. Granville. On the continent, however, physiologists have not been thus supine. Soemmering, Meckel, Pockels, Velpeau, Boer, and many others, have been active in their investigations and experiments, and have elicited a vast body of information, which is quite inconsistent with those venerable and antiquated theories, that have enjoyed such a long and peaceful monopoly in this country. Dr. Granville, from his numerous foreign connexions, was led to sympathise with the inquirers, and to rejoice at the discoveries of our continental confrères. It was not, however, a tacit approbation only which was yielded to their labours by this learned physician; the work before us proves that he has been a most active coadjutor in elucidating the laws, healthy and morbid, which regulate this interesting department of natural history.

The book before us consists of plates magnificently executed, and intended to illustrate a forthcoming work "on abortion, and the diseases incidental to menstruation;" of letter-press explanations of these plates; and of *one hundred and two* prolegomena or concise propositions which embody all the doctrines of the author on the subject.

The *twelve* first propositions merely show,—that the end of the congress of the sexes is the procreation of the species,—that this proceeds according to a uniform series of laws in man as well as in all other classes of animals,—that any deviation from these laws is a defeat of nature's intention,—that such deviation may occur

at any time during the period of utero-gestation,—that if it occur at any time before the maturation of the fœtus, it is called, in common parlance, a *miscarriage* or an *abortion*; but as, in many instances, notwithstanding its premature expulsion, the fœtus has maintained its extra-uterine life, the expression is not applied to any case that may occur after the seventh month, for after that period, the expulsion would be called *premature labour*. The object of the present work is to illustrate abortion, and not the complete life-circle of the fœtus, and consequently the propositions of the author stop at the *fifth month* of the child's intro-uterine existence, for after that period the phenomena of fœtal gestation are so uniform that they afford less matter of interest.

"Conception, or that result which follows sexual congress, in virtue of which one or more individuals of the same species is called into being, takes place in the ovarium of women. This is doubted by Meckel and others, who look upon all cases of ovaric gestation as mere accidents, and as only proving that if conception has not before taken place in the womb, it *may* take place in some other part connected with it. But the point has been set at rest by the more recent experiments and microscopical observations of Professor Boer, of Kœnigsberg. I adopt his conclusions. Their correctness is corroborated by the interesting experiments of Prevost and Dumas, although these experiments admit not that fecundation takes place in the ovarium.

"The intended receptacle of the embryo is the ovulum. An ovulum exists in all the vesicles of Graaf, which the ovarium of a woman, who has reached maturity, contains.

"Viewed by means of a powerful microscope, the ovulum is found to consist of a small yellow spherical body, placed within the vesicula Graafiana, with the upper portion of which it is, internally, in contact; so that it does not float freely in the liquid of that vesicle. This contact becomes more and more intimate as the ovulum enlarges, when that part of the capsule of the vesicle which lies over it, becomes, in a correspondent degree, thinner.

"At first, the little yellow body, being rather opaque, is distinctly seen, even without a magnifying-glass; but as it advances, it becomes more transparent, and, consequently, less distinguishable.

"This little yellow body is a minute spherical mass, with a roughish or slightly granular surface, and is hollow. Its parietes are thick. Around them is an envelope of a much thinner texture, which is distinctly seen, owing to a small space lying between it and the surface of the little yellow body, which space is filled with a fluid substance of a peculiar nature.

"When fecundation takes place, that part of the vesicle of Graaf, to which adheres, internally, the ovulum, bursts, and the ovulum escapes with its external envelope, together with a small portion of the liquid peculiar to the Graafian vesicle, and thus it passes into the Fallopian tube.

"Independently of the external envelope, and within it, the microscope has detected, after fecundation, the existence of another covering, completely investing the little spherical yellow body.

"The ovulum has been traced, after fecundation, into the cavity of the womb, where the external covering becomes what Boer has called "the cortical membrane," (*cortex ovi* of the present work,) improperly considered as a uterine production by preceding writers, and denominated the *reflected* caducous or deciduous membrane.

"The more intimate covering of the yellow body of the ovulum, that which closely invests its surface, and appears only after fecundation, is afterwards changed into what has been denominated the shaggy chorion. My observations and my plates show this. Boer, however, professes not to know what becomes of it during the progressive intro-uterine development of the ovulum.

"The hollow and spherical yellow body of the ovulum corresponds with the yelk or *vitellus* of the ovum of oviparous animals, and from it all the other several parts of the fœtiferous ovum are derived or formed, as gestation advances, and a progressive development of the parts takes place, from within, without." * * *

"A proof, amounting to demonstration, of the existence of a cortical covering to the human ovulum, and that of the filiform envelope called the shaggy chorion within it, I find in a striking and beautiful preparation belonging to Sir Charles Clarke. We there see a complete cast of the lining (caducous membrane) of the uterine cavity after fecundation, thrown off at a very early period, and with it the ovulum (of the size of a Portugal grape) exhibiting the cortex ovi, shelly and membranaceous, of a dense texture, yet flexible, which has burst like the pericarpium of some seeds, and allows the shaggy chorion beneath it to be seen. It is a curious fact, that even Ruysch has, in his fanciful manner, re-

presented a human ovulum, of about three weeks, with the cortex burst, yet still *in situ*, and the shaggy chorion beneath it, in every way resembling the specimen of Sir Charles Clarke in the Museum of St. George's Hospital.

"Even the errors of some of the very able anatomists of the present day come in to corroborate Professor Boer's observations of the cortical membrane. Breschet and Velpeau, for instance, state, that within what they (with their predecessors) have looked upon as the decidua in the human ovum, there is a cavity containing a peculiar liquid, which, in their opinion, is essential to the nutrition of the fœtus. Now what is this but the very description of the ovulum by Boer, proving that there is a cortical membrane in the human ovum?

"The cortical membrane is destined to be absorbed during the first months of utero-gestation, thus exposing the next membrane to the contact of the uterine lining (decidua), with which a connexion takes place in the part where a placenta is to be formed. In that part, however, the cortex ovi is never altogether obliterated, but only made thinner; and, in process of time, it is converted into a mere pellicular envelope, which not only serves to divide the filiform vessels of the chorion into groups or cotyledons, in order to form the placenta, but also covers all over those cotyledons or groups of vessels. I have called this the *membrana propria*.

"While the process or metamorphosis of the ovulum noticed by Boer takes place in the ovarium, in consequence of fecundation, the cavity of the womb does not remain idle, but forthwith sets about weaving for itself a general lining, a sort of pseudo-textile membrane, which extends all over the cavity, descends partly into the cervix, and is *often* (not necessarily always) projected even into a great portion of the Fallopian tubes.

"This adventitious lining of the cavity of the womb is formed quite independently of the presence of the ovum; for it has been found in most cases of devious gestation where the fœtus was *extra muros uteri*, and has been found advanced in its progress of formation, while the ovulum was, as yet, on its way through the Fallopian tube after fecundation.

"To this adventitious lining described by many ancient authors, but by none better than by Harvey, the name of *decidua*, already mentioned, has been given by Hunter, because, viewed as a production of the uterus, it is caducous, and not permanent like its own natural lining. As, however, it is no more caducous than any other of the involucra of the ovum, the denomination is not strictly correct. It is, nevertheless, more generally adopted than that of epi-chorion, given to the same pseudo-membrane by Chaussier.

"Its mode of formation, and its structure, have been differently explained by different authors. The explanation offered by Burns, runs counter to facts and realities. That author speaks of all the minute steps of generation, with the same confidence as if all had been demonstrated. His imaginings respecting primary and secondary vessels shooting out from the inner surface of the womb to form the decidua, must be gratuitous, as no other anatomist or physiologist, either before or after him, has been able to ascertain the reality of such a process.

"It is probable that the decidua consists of two laminæ, inasmuch as we always find it with one surface perfectly smooth, and the other rough. If so, they are most intimately connected. It is at least one-twentieth of an inch in thickness during the first five or six weeks of utero-fœtation, when its tissue is found to be more knotty, coarse, and full of short threads, than a purely membranaceous or cloth-like lining would be. It is not until a more advanced period of gestation that the decidua becomes distinctly membranaceous, in which state it lines the entire cavity of the uterus.

"Into this chamber, then, so lined and so prepared, the fecundated ovulum, in the condition described by Professor Boer, is received after its journey from the ovarium through the Fallopian tube.

"The pre-existence of an ovulum in the vesiculæ Graafianæ, or ovarian vesicles, and its metamorphosis, after fecundation, have been amply confirmed by Plagge of Bentheim, who published an account of his experiments and observations, illustrated by figures, in Meckel's 'Journal of Physiology.'

"As soon as the ovulum has departed from its vesicular nest in the ovarium, the cavity which remains begins to fill up with a yellow substance, different in texture from the surrounding tissue of the ovarium, and having, generally, a radiated centre of a whiter colour. This is the *corpus luteum*.

"The presence of *corpora lutea* in the ovarium of women, is always an indication that as many ovula have escaped from that organ; but it is not necessarily an evidence that the individual has been impregnated, as ovula have escaped without the congress of the two sexes.

"It is inaccurate, therefore, to state that a woman has been pregnant, because a *corpus luteum* has been found in one of the ovaria after death, or to calculate the

number of children she has borne from the number of *corpora lutea* so detected. *Corpora lutea* have been found in the ovaria of very young girls, of unmarried women of the strictest virtue, in newly-born female infants, and, lastly, in the sterile animals, such as mules."

It would appear, from these researches of Dr. Granville and his fellow-labourers, that the decidua reflexa of William Hunter is a creation of the imagination. That physiologist has not produced a single fact in proof of his theory, that the ovulum pushes before it that portion of the deciduous membrane which he supposed to obliterate the opening of the Fallopian tube; but its fallacy is proved by numerous facts, and amongst others, by a specimen of an impregnated uterus, No. 3468, C. Gallery, Coll. Surg. London, which exhibits a round ovum naturally suspended within the decidua, like a globe from some point of the interior of an oblong sack. Here the ovum has pushed no part of the uterine decidua forward, it is contained in its natural involucra only, and there is a large space between them and the deciduous lining of the womb.

"The ovulum, on entering the womb, is about the size of a small pea. The cavity, on the contrary, into which it enters from the very first, is of considerable dimensions. One cannot help being struck at this great disparity in the relative dimensions of the ovulum and the cavity of the womb. When they first come in apposition, that of the latter is from ten to twenty times greater than that of the former.

"The time at which the ovulum enters the womb after fecundation is not precisely known. The fimbriated end of the Fallopian tube has been found actually applied to a Graafian vesicle after copulation. An ovulum, containing the rudiments of an embryo, has been observed in the human subject half engaged within the tube, and half still resting on the ovarium. The ovulum has been detected on its way through the Fallopian tube. It is said to have been detected in the uterine cavity on the eighth day. Although it has lately been the fashion to doubt the accuracy of such a fact, there is reason to believe it to be correct, from the circumstance of M. Bauer's microscopical examination of that ovulum, and his description of its structure corresponding with more recent discoveries. The embryo, contained in an ovulum of a week's growth, has been seen and measured. The ovulum, until the eighth day, has been observed in the uterus under a gelatinous form by another anatomist. Ovula in the Fallopian tubes have also been seen on the eighth day by Prevost and Dumas.

"I have had occasion, within the last two months, to see a perfect ovulum ejected from the womb fourteen days after a single sexual congress, which had taken place the day after the cessation of the menses. Dr. Pockels examined more than fifty human ova, among which four had been expelled from the womb between the eighth and sixteenth days after conception. On the fourteenth day the ovulum is about the size of a Spanish nut. The chorion is surrounded by a thick membrane.

"An ovulum at three weeks is mentioned by Hunter. At twenty-two days a perfect ovulum, with the embryo clearly defined, was shown by Dr. Combe to Dr. Baillie. Blumenbach asserts seeing an ovulum of the size of a small cherry, which could not have had more than twenty-three days existence. M. Ogle's case was one of an ovulum in utero at five weeks. These facts contradict Burn's assertion, that at 'three weeks, or a month after impregnation, no fœtus is in the uterus.'

"After being safely lodged within the cavity of the womb, the ovulum continues to grow on its own life-principle, for a while, until its connexion with the mother is effected through the medium of the deciduous membrane, which becomes, at a more advanced period, as it were, a new and additional covering to the ovulum. The growth of the ovulum causes the *cortex* to burst, as happens with the receptacle or cortex of certain seeds, and with the outer shell of the ova of some oviparous animals.

"On the cortex bursting, the lanuginous or fibrillous membrane within it is exposed, when the fibrils will forthwith entwine themselves with the flocculi of the decidua, and thus the ovulum fastens itself to the uterus by one or more contiguous points.

"The membrane having these fibrils on its surface has been called the *chorion*, and from the circumstances that these fibrils, both before the cortex which lies over them has burst, as well as afterwards, serve to promote the nourishment of the fœtus. I have styled it, the nutritive membrane or involucrum of the fœtus. It has been so considered by Ruysch, who calls the villous side of the chorion, '*succosa nutritioni fœtus inserviens.*'

"The fibrils of the chorion have generally been considered as filiform vessels,

When examined with the microscope, they appear diaphonous and ramiform. Some of them terminate in little bulbs, like the ampullæ of the villosities of the intestines. These bulbs adhere so firmly to the cortex ovi, that when an attempt is made to detach them, many are lacerated. It is only when the cortex bursts of its own accord that they are set at liberty.

"These fibrils, however, are not all vessels. Some are only suckers, others are real vessels. The existence of any vessels among the fibrils of the chorion, has been denied, very recently, upon the same ground, namely microscopical observations. But there must be an evident mistake in such observations; for the actual progress of those filiform vessels, and their gradual swelling into large veins and arteries, at an advanced period of fœtation, have been noticed in examining various human ova of different ages.

"The nutritive envelope, or involucrum, or membrane (chorion) of the ovum, is bifoliated. I have a beautiful preparation of the transparent membranes of the ovum, even after regular parturition, which proves this fact. It is, probably, even trifoliated. A fluid has been found between the two laminæ of the chorion.

"The internal surface of the chorion is, likewise, supplied with fibrils, which connect it with the next and innermost involucrum of the fœtus, called the *amnion*. Between the fibrils or filiform vessels of the two surfaces, a communication is kept up by small vascular trunks, which meander between the two laminæ of the chorion.

"The vascularity of the chorion is further proved by its disease, chiefly of an inflammatory character, ending in the thickening of its texture. There is a preparation in Sir Charles Clarke's collection which shows the vessels of the chorion as evidently as if they were injected.

"But the vascularity of the transparent membranes is proved, further, by fine injections thrown into the vessels of the ovaria of women; on which occasion a beautiful network of minute vessels is rendered manifest, forming a species of vascular ring around the *vesiculæ Graafianæ*. The same observation has been made by comparative anatomists.

"These facts, demonstrative of the vascularity of the chorion, explain and account for the reality of that self-existing life-principle which is inherent in the fecundated ovum, which detaches it from its rest (vesicula Graafiana), enables it to travel through the tube, to grow or expand while thus travelling, and to maintain that same power of growth and development for a short time after its reception into the womb, until its final and effectual implantation on the maternal stock (uterus).

"The same holds good with regard to the amnion, or inner transparent membrane of the ovum, which, although normal anatomy has failed, morbid has succeeded, in proving to be vascular.

"If it be true that the amnion is a vascular membrane, there is no difficulty in viewing it also as a secreting membrane. Hence the source of that particular fluid to which the name of "liquor amnii" has been given, and in which the embryo is suspended to the end of gestation.

"The amnion is a sac formed by the reflected epidermis of the embryo. It does not exist before the twelfth day. At the eighteenth day it is found as a bladder placed on the back of the embryo, and continuous to it along its edges or sides, and at its extremities. It has been distinctly seen on the twelfth day. It is then not a concentric membrane within the chorion, but a vesicle, on the outside of which the embryo rests as on a bed. Until the day in question the embryo is connected to the vesicular amnion at the back, by a cellular transparent membrane. From that time to the sixteenth day, the embryo progressively gets into the cavity of the amnion, which before was connected with the chorion by one of its piriform extremities, while the other conical extremity penetrates slowly into the albuminous fluid of the chorion.

"While the embryo is within the chorion (nutritive involucrum) and rests on the vesicular amnion, the former membrane, or sac, contains a reddish transparent fluid, having the consistency of the albumen of an egg, with a colourless and very slender membrane crossing it in various directions.

"The progressive increase of the ovulum, from the time of its quitting the ovarium until it has stationed itself firmly within the womb, has been demonstrated. In examining, between eight and twelve days after fecundation, the female organs of such of the mammalia as are multiparous at a single gestation, one ovulum has been found near the fimbriated end of the Fallopian tube of one size; a little farther into the tube another of a larger size; and, lastly, near to the uterine orifice of the tube, a third of a still larger size; showing the relative progressive increase that had taken place in such ovula, subsequently to a single act of fecundation, and proportionate to the time employed by such ovula in travelling to the spot in which they were found.

"While thus circumstanced, the ovulum is never connected with the part

through which it passes. On plunging that part into water, the ovulum is found not only to rise to the surface, but to float.

"What stronger proofs need be required of the existence of an inherent life-principle in the ovulum, which is, at one time at least (indeed, I suspect throughout the period of gestation), independent of any connexion with the parent mother? Yet none of the earlier writers who adopted the ovarian theory of generation have ever asked themselves this question,—What supports the vitality of a fecundated ovulum after it has left the ovarium, and previous to its becoming connected with the womb? In fact, the subject had never been mooted before the more modern physiologists took it up and satisfactorily explained it.

"That the embryo probably lives in utero in virtue of its own life-principle, even through the entire period of gestation, is rendered probable by many facts related by unimpeached authorities, which go to prove, that when the whole intact ovum has been expelled at an advanced period of gestation, or at the natural termination of that period, the fœtus has continued to live, and the circulation of the blood has not ceased for an instant, during a space of time of from nine minutes to a quarter of an hour. It has been asserted by a venerated authority (Harvey), that in an intact ovum, expelled at seven months, the fœtus lived upwards of an hour. The truth of this assertion is confirmed by very recent observers. I once destroyed a female cat with prussic acid, near the time of parturition; and having removed from the horns of the uterus the entire ova, with their beautiful annular placentæ, while the fœtus in each of them was still perfectly lively, and could distinctly be seen, through the membranes, to move; I found that at the end of thirty-five, forty, and even forty-two minutes, some of them were still alive, the ova remaining entire all the time, and upon the table.

"When the ovulum has made good its fastening to the adventitious lining of the womb (decidua), the circulation of the blood in it is as yet imperfect. The ovulum does not, cannot, receive the blood of the mother. How could such a gossamer-like being, organised as the ovulum has been proved to be during the first days after fecundation, be made a part of so impetuous a torrent as the circulation of the blood of the mother, without instant destruction to the produce of conception? No. The blood of the embryo is first formed within itself."

These views are new, highly philosophical, and particularly interesting. It would appear that the embryo is protected and covered in its development, and after its escape from its Graafian vesicle, most externally by the uterine decidua, next by the *cortex ovi* which is absorbed almost entirely, after the fourth week, but part of which remains in the shape of the *membrana propria*, which is a pellicular envelope that serves to divide the vessels of the chorion into cotyledons, in order to the formation of the placenta, by the *liber ovi* or chorion, which is bifoliate, and lastly by the amnion. These are all proved to be vascular membranes. The new animalcule passes through two striking metamorphoses previous to the enjoyment of atmospheric life. These are the embryonic and the fœtal states. The latter succeeds immediately to the former, beginning the moment the new being is ingrafted, in the manner described by the author, in the womb, and continuing till its expulsion at the natural period.

We pass by the next nine prolegomena wherein the author describes the gradual development of the fœtus, as the facts contained in his description simply correspond with those already given by the best authorities.

"The vesicula umbilicalis (intestinal vesicle) corresponds with the vitelline sac of birds. The discovery is due to Bojanus. In the human embryo it measures about half an inch in diameter. It is situated immediately against the anterior surface of the embryo; but it gets further from it at the end of the first month, when it is found on the outside of the sheath of the cord. It is composed of a granular membrane of considerable tenacity. It contains a whitish liquid, which gradually diminishes — becomes thicker, and ultimately hardened, while the vesicle itself withers, and becomes opaque. It receives the bloodvessels called "omphalo-mesenteric." It disappears generally about the third month. It has been observed, though extremely rarely, at the full period of gestation, placed at a short distance from the insertion of the cord into the placenta, but not larger than when seen at between two and three months. It is connected, as stated before, by a short neck, and by vessels, with the smaller intestines at the termination of the ileum, or at the cæcum, which is, in reality, the representative of the vesicula vitellaria drawn into the abdomen, as in birds.

"At the lower end of the anal intestines there projects another vesicle or sac, to which the name of 'allantoid' has been given. It exists in birds—in all the mammalia—and in the human embryo. In the latter it appears about the fourth week, and by the sixth week it has almost disappeared. Its existence is, therefore, but short, while the size it attains is always trifling. Not so with the mammalia, in which it acquires great amplitude. The communication of this sac with the bladder, by a canal called the 'urachus,' and which canal is found impervious after the first three or four months of gestation, is admitted by all observers.

"The umbilical cord or navel string, in man, has been found to spring from a vesicle, to which the discoverer (Dr. Pockels) has given the name of 'erythroid.' This vesicle had been before observed in the mammalia. The cord appears at the end of the third week. It then consists of a vein and two arteries, the urachus, a species of gelatine of a ropy nature called the 'gelatine of Wharton,' a portion of the intestinal canal (larger in proportion as the embryo is younger), the vesicular umbilicalis, in part, and the omphalo-mesenteric vessels, the whole enveloped by a sheath proceeding from the involucra of the ovum already described. The last three constituent elements of the cord, however, become obliterated, or disappear, after the third or fourth month of gestation. The others remain permanent throughout that period."

A knowledge of the umbilical and exomphalo-mesenteric vessels must be familiar to our readers. We shall, therefore, omit the author's perspicuous description of them. He next enters upon the subjects which occupied attention in the late controversy, and those also must now be so well understood, that we feel it unnecessary to devote any further portion of our journal to them. We shall only observe, that a very clear light is here thrown on the nature of the connexion which exists between the mother and the fœtus. "The decidua," says Lallemand, "has no other function to perform than that of serving as a capillary system, intended to be the medium of communication between the bloodvessels of the mother and those of the fœtus." The views of Dr. Granville in this respect, only differ from those of Dr. Hunter in the denial of that physiologist's notion, that continuous vessels go *through* the decidua direct into appropriate cells or laminæ, where he supposed the arteries deposited their blood, which the veins carried back again to the uterus, after bathing the terminal or cotyledonous vessels of the fœtus; and in the substitution of a dendritic arrangement of decidual vessels for the cellular tissue of Hunter. The following summary of the views of Dr. Granville may be extracted with advantage and economy of space:

"The decidual vessels receive the arterial blood of the mother. This is spread over a very considerable surface of tubular structure, which being, in its distribution, made to come in apposition with the infinite ramifications of the umbilical placental vessels at innumerable points (like the inspired air distributed through the bronchial passages is made to come in apposition with the myriads of vascular rami of the lungs); the required changes in the blood of the fœtus are produced, just as the changes called for in the pulmonic blood are produced, by the peculiar arrangement of that part of the animal economy. When the arterial blood of the mother has produced the desired effect on that of the fœtus, it is returned by the decidual veins to the uterine sinuses applied, like absorbing mouths, to the surface of the decidua, when it enters into the general venous system of the mother.

"Of the two vascular systems, forming the machinery of the utero-decidual and fœto-placental circulation, that of the former is the smallest and least extensive. In point of origin, also, the latter has precedence. The umbilical vessels unite the fœtus to the chorion before any regular placenta is formed outside of the membrane. Up to the tenth week the decidual vessels are slender, straight, and insulated, while the umbilical vessels begin already to arrange themselves into minute cotyledons. The reason of these arrangements is obvious. The embryo needs growth. This it gets through the maternal blood. But as its gossamer frame, for the space of two and three months, requires but little assistance from such a source for the promotion of growth; and as a large supply of maternal blood, at that early period, would overwhelm, instead of enlarging, the embryonic fabric, such an arrangement of means only obtains in the reciprocal circulation as is calculated to ensure the desired effect.

"This effect is nutrition. 'Considering the power which the ovulum displays when it first reaches the uterine cavity, of imbibing matter for its growth, together

with the facility with which, according to Dutrochet, fluids may be drawn through animal membranes, it is not difficult to believe that nourishment is directly imbibed from the vessels of the mother by the circulating fluid of the embryo, through the fine intervening membrances.'

"It is possible, also, that other means may be at play in the promotion of such an effect in the fœtus, besides the one before mentioned. We may instance, as a probable one, lymphatic absorption. The probable existence of lymphatics in the placenta was admitted by Dr. Hunter. 'It is most probable that it (the fœtus) is nourished by thousands of small lymphatic vessels which absorb nourishment from the blood of the mother, and carry it along the navel strings. It is true we cannot see any lymphatics running upon the navel-string, yet it is reasonable to conclude they do.' Hunter's conjecture has since been realised. (See Chaussier, Fohman, Uttini, Lauth.) The second of these anatomists has delineated them in rich profusion, extending from the placenta along the funis, leaving the funis at the navel, and directing their course to the groin."

The author quotes certain speculations relating to the nutrition of the fœtus, but these for the most part are mere hypotheses. The nature of the changes which the fœtal blood undergoes is not understood. There is no change of colour, but that does not imply the absence of any intrinsic alteration in the properties of the fluid. It is, however, of the utmost importance to bear in mind the great distinction which exists between the independence of the fœtus *quoad* life, and its dependence *quoad* nutrition. The former is secured by a total separation of the two circulations, and the latter by the close contact of the organs supporting those circulations. Thus it is we find the fœtus living on, after its connexion with the mother has been severed; whilst, on the other hand, the influence of the mother over her offspring is unquestionable.

The principal part of Dr. Granville's work, as we have already hinted, and as the title-page declares, is *graphic*. The plates, which are twelve in number, are, as we remarked when they first came under our notice, most accurate and beautiful; in truth it would be vain for us to attempt to describe what these plates so well represent. It becomes the duty of every man who loves study, and to encourage the labours of others in the higher walks of the profession, to examine the book itself. We have now simply to say, that every point in the text which could be advantageously illustrated by original drawings, is made the subject of a beautiful reference to nature, as she may be seen in the bright mirror of pictorial art. The figures are, first, those of morbid ovula, from three weeks after menstruation, supposed to have passed away from the womb almost immediately after entering it, in consequence of a deficient formation of the peculiar lining which the uterine cavity weaves for itself after a successful congress of the sexes. Then, rudiments of an embryo, more than usually diminutive; the transparent involucra and placental covering imperfectly developed; an embryo of about *five* weeks old, the volume of the transparent involucra in which, is disproportionate to the embryo itself, and the placental covering, with its filiform vessels, bearing a still larger proportion to them; then, abortions at from eight weeks to five months. *Ovum fœcundum in receptaculo ovarico*, early period; *in receptaculo tubico*, more advanced period, with a large collection of other highly interesting plates, all admirably finished, and in every way worthy of the important views they are destined to elucidate.

The work is admirably executed, and proves, most indisputably, that Dr. Granville, as an investigator in the field of medical science, is endowed with high mental capabilities and attainments.

EXCLUSION OF MEDICAL MEN FROM THE COLCHESTER HOSPITAL.

To the Editor of THE LANCET.

SIR,—As Chairman of the meeting at which the accompanying address to the Committee of the Essex and Colchester Hospital was agreed to, I am requested to send it to you, together with the answer.

In the present stage of our proceedings I think it only necessary to state, that there are but three surgeons residing in the town, unconnected with the hospital, who did not sign the Address, and that

one of these was a party to the proceedings we complain of during the ten years he was Surgeon to the Institution. The present surgeons are, Messrs. Nunn, Partridge, and Waylen. You have effected mighty changes in the management of kindred institutions in London since you began your Herculean task, and I do trust that you will prove your power of *ubiquity* by an exposure of our provincial abuses. You will be informed of our ulterior measures, and have a full account of the *staff* kept up for the use of our hospital, which accommodates about 40 in-door patients.

I am, Sir,
Your obedient servant,
JAMES MORSS CHURCHILL, F.L.S.

" To the Committee of the Essex and Colchester Hospital.

" Gentlemen,—We believe you will consider no apology necessary from us for addressing you on a subject connected with the interests of the institution of which you constitute the executive.

" You are doubtless aware that the medical practitioners of Colchester not in immediate connexion with the hospital, are at all times sedulously excluded from it, while their brethren resident in the neighbouring towns and villages are generally present by *invitation*, at the performance of all important surgical operations in your operating theatre. So that not only are we prevented from all opportunities of rendering professional assistance to the objects of the charity, by the law which enables the medical officers of your institution to hold their places for life; but we are also shut out by the interdict of the surgeons from a participation in immunities to which our more favoured brethren around us are admitted. This proscription we hesitate not to designate *uncourteous, invidious*, and *unjust*, and such as the governors of no public charity, supported principally by the voluntary munificence of the public at large, should either countenance or allow. We, therefore, confidently hope, that your attention has only to be more fully directed to the subject, to cause the enactment of such statutes as shall effectually destroy those invidious distinctions, and open the doors of your institution, at all proper seasons, to every respectable member of the medical profession.

" In thus appealing to you, we know we are acting in accordance with the views of many of the supporters of the charity, who consider a more liberal policy essentially connected with its best interests, and likely to render it more extensively useful to the community.

" We are, Gentlemen, yours respectfully,
(Signed)

" PHILIP GRETTON,	J. M. CHURCHILL,
JAMES BARKER,	J. A. PHILBRICK,
SAM. PHILBRICK,	E. L. GIRLING,
DAVID MORRIS,	B. G. WALKER.

" Colchester, October 10, 1833."

Answer to the foregoing Address.

" To J. M. CHURCHILL, Esq.

" SIR,—Having communicated the letter accompanying your note to the Committee this day, I am desired to state in answer, that it was the unanimous opinion of the Board, that a compliance with the request contained in the above letter, would be in direct opposition to several rules of the institution in which the Board do not consider it desirable to recommend any alteration.

" Herewith you will receive copies of the rules and regulations of the hospital. I am, Sir, your obedient servant,

" C. E. STUART, Secretary.

" Essex and Colchester Hospital,
14th October, 1833."

ALDERSGATE-STREET DISPENSARY.

MEETING AT THE NORTHAMPTON INFIRMARY.

AT a numerous meeting of the members of the medical profession resident in Northamptonshire and the neighbouring counties, held at the Northampton Infirmary, Oct. 5th, 1833, Dr. A. ROBERTSON in the chair, the subjoined resolution was passed unanimously, and with acclamation, the following gentlemen being present:—

A. Robertson, M.D., Physician to the Northampton Infirmary.
John Horwood, Surgeon, Northampton.
H. Terry, Surgeon to the Northampton Infirmary.
James Mash, Surgeon, Northampton Infirmary.
Geo. Osborn Rogers, Surgeon, Newport Pagnel.
William Roughton, Surgeon, Kettering.
W. S. Wyman, Surgeon, Kettering.
A. Billson, Surgeon.
F. H. Ripling, Surgeon, Newport Pagnel.
Samuel Bucknell, Surgeon, Rugby.
Thomas Osborne, Surgeon, Northampton.
John Scriven, Surgeon, Wellingborough.
Thomas Heygate, M.D., Harborough.
John Elderton, Surgeon, Northampton.
Benjamin Dalley, Surgeon, Wellingborough.
William Dix, Surgeon, Buckby.
T. H. Lewis, Surgeon, Stony Stratford.
Charles Noble, Surgeon, Brixworth.
Thomas Clark, Surgeon, Wellingborough.
John Marriott, Kilworth, Leicestershire.
A. M. Outlaw, Surgeon, Wellingborough.
J. Parker, Surgeon, Towcester.

J. G. Leete, Surgeon, Thrapstone.
John Hall.
Charles Aspray, Olney.
William Kerr, M.D., Physician to the Northampton Infirmary.
J. W. Noble, M.D.
J. M. Calvert, M.D.
William Percival, Surg. Northampton Infirmary.
D. Mapnall, M.D., 33rd Regiment.
Charles Loe, Surgeon, Stony Stratford.
William Gibbon, Surgeon, Kettering.
James Mackness, Surgeon, Northampton.
Benjamin Clark, ditto, Northampton.
John Abbey, ditto, Harborough.
Francis Marshall, Surgeon, Pitsford.
Thomas Beales, ditto, ditto.
Thomas Cook, Surgeon, Northampton.
H. Gatty, Surgeon, Market Harborough.
E. Thompson, Surgeon, Daventry.
Robert Dawson, Surgeon, Long Buckby.
John Harris, Surgeon, Genl. Infirmary, Bedford, and Medical Super. County Lunatic Asylum.
William Bailey, Surgeon.
William Williams, ditto.
Thomas Collier, Surgeon, Towcester.
T. Bishopp, M.D.
G. H. Grindon, Surgeon, Olney.
John Collier, Surgeon, Brackley.
William B. Costello, London.
Charles John Brickwell, Surgeon, Banbury.

"That this meeting, taking into mature consideration the nature and bearings of the dispute between the governors of the Aldersgate-Street Dispensary and the medical officers of that institution, are unequivocally of opinion that the said officers have vindicated their own honour and the honour and dignity of the medical profession, in the noblest manner, by resisting a regulation which strikes at the root of honourable and talented competition for medical offices, and opens the door to ill-disguised venality and intrigue.

"This meeting is furthermore of opinion, that the late medical officers of the Aldersgate-Street Dispensary, by the spirited and independent manner in which they have acted, are well entitled to the support and sympathy, the thanks and gratitude, the approbation and admiration, of the profession at large."

EFFECTS OF RICE ON CHILDREN.

To the Editor of THE LANCET.

SIR,—I have read the communications of Dr. Tytler respecting the "rice question" with much interest, and cannot but admire the manly expositions of the Doctor, as well as the good tact and talent he displays in answering all who appear to take a different view of the subject. If it be not one of paramount consequence to the public and the medical profession, I know not what is; neither will it remain in its present state. The Doctor calls for the aid of the profession, and as the matter is so important, every fact should be forwarded, in order that the discoverer's views may be elucidated. About seven or eight years back, my family (a large one) used to partake of puddings made of rice, which was purchased at about 2½*d.* per pound. These were frequently made on the supposition that they were wholesome and nutritious. At that period, all of the children were attacked at intervals with diarrhœa, and they evidently fell away in muscular vigour. I certainly, for some time, did not attribute the purging to the rice, it being the last article of diet I suspected. I occasionally partook some of those puddings myself, and whenever I did so, was invariably affected with pain in the stomach, and other dyspeptic symptoms. I soon after countermanded the rice, when the diarrhœa and other symptoms vanished, and the children regained their usual healthy looks. One of them (a boy now in Christ's Hospital), however, nearly lost his life; and had not his moans roused the vigilance of his mother, who was in an adjoining room, he decidedly would, in a few minutes, have fallen a victim to the attack. He had, during the night, been seized with vomiting and purging to such an extent as to fill a large earthenware vessel. His mother found him extended on the bed, the liquid motions, and contents of the stomach being involuntarily ejected, for his appearance was that of a corpse, and, indeed, most ghastly and terrific. His face pallid in the extreme; the eyes sunken, and having a livid dark hue surrounding them; the mouth had the same circle of lead colour about it. Means being at hand, the state of collapse was fortunately overcome, although he very nearly expired during the reaction. I then considered it the worst case of English cholera I had ever encountered. It may be as well to say, that no other bad case happened in my family after this, since which, rice, in every shape, has been an object of suspicion. By-the-by, Mr. Dendy's "teaspoonful of kun," reminds me of Falstaff's item in the tavern bill at Eastcheap—"One halfpenny worth of bread." Perhaps the attention of Dr. Tytler has not been drawn to the inferior pastry sold at the various retail shops in the metropolis, vast quantities being made with rice flour, and, upon fair presumption, not of the best quality. Your reports generally are admirable, and the Doctor appears fully to appreciate them.

I remain, Sir,
Your obedient servant,
THOS. LITCHFIELD, M.R.C.S.

Twickenham, Oct. 27, 1833.

LONDON MEDICAL SOCIETY.

Monday, October 28th, 1833.

Mr. KINGDON, President.

CHOLERA.

THE room of the Society was this evening again largely attended, and the subject of "cholera" was once more debated. Although the physician of Jessore and Allahabad was not the "exciting" cause, we doubt not he was the "predisposing." A new interest has been given to this disease. Its discussion is reapproachable, without the excitement of that nausea which even this all-important subject has long produced in the medical societies. But yesterday the most eager debaters would have shrunk from its consideration, for the topic only deepened in mystery the more it was argued. To-day the topic is sought rather than avoided. No branch of this subject, indeed, can now be contemplated without a conviction that a remarkable light has lately been thrown on a thousand puzzling circumstances attending it. If the proof be indubitable that diseased grain has been the great chief cause of the malignant cholera, the dark veil of the disease is rent asunder, and in a moment we explain innumerable contradictions which before distracted science, and shook her throne to its base. Even had the doctrine of Dr. Tytler no foundation in facts, it would present us with a theory so simple of application, and so rationally solvable of the morbid riddles and strange events of the cholera, that as a theory it is hardly to be paralleled in medicine. But indissolubly united as is that doctrine with "incontrovertible facts,"—to use the words of the Bengal Medical Board,—how vast is the relief which the mind derives from the disclosures made in this Society during a few brief evenings of the past month! Those disclosures, in fact, must operate, though unconsciously, even upon the feelings of men who withhold entire credence from the views of the Indian Galenite. A monstrous incubus has been raised from the question of cholera, and with minds proportionably lightened, practitioners again exchange opinions on this too familiar topic.—For the debate we have not room this week.

ALDERSGATE-STREET DISPENSARY.

Dr. UWINS, before separating, said, I wish to move that a special meeting of the Society be held on this day week, to consider the late circumstances connected with the Aldersgate-Street Dispensary, and the results which are likely to follow the resignation of the medical officers. Centrally situated, ancient, and respectable, as is this Society, it is its duty to stand by medical men who are placed in the situation of those gentlemen. We have been anticipated in this step by another society, when we ought to have been first. The late proceedings in Aldersgate-street will lead to results which will prove incalculably beneficial to the profession.

Dr. WALLER.—I second the motion. The subject has been unintentionally kept back by the discussions on the rice question,—

The PRESIDENT—Which it was almost impossible to stop. The motion of Dr. Uwins I now put to the vote. Carried unanimously. Though next Monday was appointed for a general meeting of the Society, visitors will be admitted to the room during the consideration of the subjects comprehended in the motion.

WESTMINSTER MEDICAL SOCIETY.

October 19th and 26th, 1833.

MEDICAL REFORM CAMPAIGN.

THE re-assembling of this Society for the season took place on the 19th, when Dr. Copland presided, and martialled the forces for the new campaign. He pointed out on that occasion that they would this year have to march upon new ground—to enter the regions of medical reform, and combat a dragon of monstrous form and pestiferous breath, whose name was "Corruption," whose castle was the "College of Surgeons," whose palace was the "College of Physicians," and whose gun-wharf was "Apothecaries Hall." He warned them that the enemy was powerful, and had a host of mighty generals in his service, but that if they had valiant hearts kept well together, and fought without fear, success must crown their exertions, and the prize of their high calling prove worthy of the toil. Three cheers were then given for Queen Science, under whose banner the troops were to enter the field, and the men at arms then betook themselves to various business, amongst which was the election of new officers by whom the ensuing campaign is to be conducted. The enemy whose territory is to be assailed is said to be *all officers*, who elect themselves. The parliament troops are to join the reformers in a few months. A preliminary attack was this evening ordered to be made on the 26th, against a

division of the enemy posted in Aldersgate-Street.

RESIGNATION OF THE MEDICAL OFFICERS OF THE ALDERSGATE-STREET DISPENSARY.

On Saturday, the 26th of October, nearly 200 gentlemen present,

Mr. PETTIGREW in the chair,

Dr. GEORGE GREGORY, pursuant to notice given last Saturday, rose to direct the attention of the Society to the subject of the above resignation, "with the view of giving the thanks of the members to the medical officers of the dispensary for their conduct, and of expressing the feeling of the Society relative to what virtually amounted to the sale of professional appointments." This he accordingly did, in a speech which was well calculated to surprise the friends of the medical officers to whom he alluded. He blew hot and cold on their conduct with surprising equability, the cold, however, predominating. The cause for which they resigned, every man, he said, "must have at heart;" yet the circumstances which distinguished the line of conduct they had pursued, was the subject of serious animadversion with him. So ill did he think of their proceedings, that he kept away from the meeting at the *Freemasons Tavern*, because he disapproved of many things they had done. "In spite, however, of their little mismanagement, their want of tact and generalship," in spite of the "injudicious quotation which one of them had made from Cato," in spite of their paltry dispute about "a door-way in a side passage in Aldersgate-Street," in spite of their neglect to "retain their situations until their successors were appointed"—in spite of all this, he came forward,—to move that the thanks of the Society be given to the ex-medical officers? No. Therein he was not inconsistent, but that "the interests of the poor, and the respectability of the medical profession, required that the appointments to public charities should be free even from the suspicion of being open to purchase!" Happy ex-officers, that they were not visited by a motion of censure for their "mismanagement and want of tact and generalship"—qualities, by-the-by, which are oftener the characteristics of knaves and hypocrites than of honest men. Dr. Gregory thus brought in question the good taste, the straightforwardness, the magnanimity, and the humanity, of the ex-medical officers. Never was irony better employed than when Dr. Jewell, nursing in recollection the justice of these charges, some time after declared that "the thanks of the Society were due to Dr. Gregory for bringing this subject before them." Dr. Gregory subsequently advanced some arguments in support of his resolution—the principle of which may be found nineteen volumes back (or thereabouts) of this Journal—lamented the scandalous fact that medical appointments, not only in dispensaries, but in "the London Hospitals, were open to those men who had the longest purse,"—alluding, undoubtedly, to the hospital apprenticeship system—deprecated the disposition on the part of committee-men and governors to "ride that willing horse, the medical profession to death,"—hoped, in the same breath, that "all the medical duties of charitable institutions in London would be performed gratuitously" (!)—announced in the next, that the overseers of the parish of Marylebone, where 144,000*l.* a year was collected in the name of the poor, grudged 200*l.* a year for their medical care,* and thought, "*therefore*," that the Society (fine logic!) "should uphold medical men who defended the interests of the poor and the respectability of the profession," after the manner of the ex-medical officers of the Aldersgate-Street Dispensary.

Mr. GRIFFITHS seconded the motion, and observed, that he "had once stood a good chance of being chosen" gratuitous surgeon to a dispensary, but he was beaten by the ready-money voters of a rival.

Dr. EPPS having some opposition to offer to the main object of the meeting, here begged that all the resolutions might be read, that he might know at what point his efforts were to be exerted.

The CHAIRMAN having complied with the request, the first resolution was carried unanimously.

Mr. CHINNOCK, in an able speech, moved the second resolution. Between eight and nine hundred gentlemen, he said, were members of the Westminster Medical Society, and the opinion of that Society ought therefore to be made known on this occasion. A new era had lately opened to medical men, and he trusted that, inspired with boldness by the example before them, the profession would pursue the advantage they had lately gained by the noble resignation at the Aldersgate-Street Dispensary, no longer

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* It is here worthy of note, that Dr. Gregory added, "the physicians of this parish receive nothing for their labour, for the vestrymen say, 'Throw up your offices if you like; we can get plenty of medical men to fill them for nothing.'" Yet Dr. Gregory expressed a hope just before, that medical men would execute such duties as attach to those offices gratuitously!" Yet, probably, if Dr. Gregory was told by any friend that he did not act on *principle*, and that he was not a medical reformer, he would be offended.—*Rep. L.*

suffering themselves to be degraded by the employment of those arts which had been practised at medical elections, whereat 500 guineas were sometimes paid to secure an office in a dispensary to avoid paying 1000 for a practice or a partnership. A true *esprit de corps* would prevent medical men from thus attaching themselves to charitable institutions. *(Hear, hear, hear.)* He then moved that the money-vote regulation of the non-medical committee of the Aldersgate-street Dispensary amounted, virtually, to the sale of the medical offices of that institution. *(Applause.)*

Dr. RYAN, in a brief speech, which was much interrupted by an injudiciously-timed ballot, seconded the motion.

Dr. WEBSTER, having condemned the opinion of Dr. Gregory, that the ex-medical officers ought to have attended at the dispensary longer than they did, and having defended them against some imputation that they were eager to get back to their situations, moved that the cordial thanks of the Society be given to them for the line of conduct they had pursued. *(Applause.)*

Mr. MILLINGTON seconded the motion, when

Dr. EPPS rose to oppose it, on the ground that this was a meeting of inquiry into the conduct of the ex-medical officers, whose conduct would not stand the test of such an exposure as he should make respecting it. He had probed this question to the bottom, and found that the ex-medical officers had all of them either got elected, or had tried to get elected, under the very law or principle for opposing which the cordial thanks of the Society were now proposed to be given them. Such cordiality was not deserved, and the vote of thanks he would therefore oppose, for what was due to the "dignity of the profession" formerly was due to it now. *(Cries of "No, no;" and from two gentlemen, "Hear, hear.")* Moreover, many of the committee on the subject of votes did them the highest honour. He was warmly opposed to the principle of money-votes, but no thanks were deserved on this occasion. Dr. EPPS then entered into many details relative to the elections of the medical officers (amid many opposing exclamations), when he was interrupted by Dr. Copland, with the query, "Were all these facts?" The Chairman replied, that some of the ex-medical officers were present to contradict them if not true. Eventually they were contradicted in almost every particular; it would therefore be but a waste of space to enumerate them here. Suffice it say, that Dr. Epps concluded by challenging Mr. Salmon to deny that he had put down 200 guineas to secure so many votes on his side in one of his contests at the dispensary. *(Hear, hear.)*

Mr. SALMON rose under, he said, very acute feelings, and declared that he would disprove the insinuations of Dr. Epps at a fit time, and then place Dr. Epps in the situation he ought to hold as regarded this matter.

Mr. KING contended for an uninterrupted hearing of the facts advanced by Dr. Epps, especially since the passing of a vote of thanks to the medical officers would be a reflection on the committee, whose conduct might be free from blame. At the same time he was thankful to the medical officers for having afforded the public an opportunity of inquiring into the present scandalous system of election in public medical institutions.

The CHAIRMAN thought Dr. Epps had travelled far out of his road, and hoped that if he had anything more to say, he would confine himself strictly to the question of thanks for the resignation.

Dr. EPPS considered he was quite in order, and again rose to justify the opposition he had had the courage to offer in the face of such a majority against him. He then entered on some fresh charges, one of which was, that the medical officers, though they had now resigned, had allowed themselves to continue in office under a law which permitted life-governors (paying 10*l.* 10*s.*) to vote at elections on the instant of their creation; and another, that Dr. Clutterbuck was still consulting physician to a dispensary (the Farringdon) in which subscribers could vote on the day of their becoming governors. He called on Dr. Clutterbuck to throw this office up, and reiterated his opposition to the vote of "cordial thanks."

Dr. SIGMOND thought the feeling of gratitude to the medical officers was so universal in the profession, that no one could have been found to oppose the motion. Did it follow that because they came in under an obnoxious law, they ought not to try to get rid of it? Sir F. Burdett entered Parliament as member for Boroughbridge, but was he not therefore to vote for the abolition of rotten boroughs? In fact, the profession must be deeply indebted to gentlemen, whoever they might be, who made the first stand on such an occasion. Dr. Birkbeck and his coadjutors had mounted the first step of the bill of reform; the profession must get up the rest as they best could, especially as the Legislature could not help them in the task. The profession did too much gratuitous work, and he hoped the thanks would be unanimously

passed (with one exception) in the handsomest possible way. (Hear, hear.)

The motion was then put from the chair, when there appeared but one hand held up against it.

Dr. COPLAND, in moving a vote of thanks to the Duke of Sussex, on the ground of his having materially assisted the cause by resigning his office as "patron," admonished the members that if any reform took place in the appointments to medical offices, the means must come from the profession itself.

Dr. SIGMOND seconded the motion, and said that if the medical profession owed a deeper debt of gratitude to one illustrious individual than another, for—(for *what*, escaped us)—it was to the illustrious Duke. The Royal Society was an instance of his zeal. The Duke had done for it in a few months more than anybody else had done for years. (Carried without opposition.)

Dr. SOMERVILLE, in moving that medical men who virtually purchase medical appointments, forfeit thereby the respect of their medical brethren, congratulated the members on the approaching end of "the accursed hole and jobbing system of medical elections." When the vacancies were declared at the Aldersgate-Street Dispensary, it was expected that the city would be choked with omnibuses full of candidates driving to that quarter, but when he saw the last advertisement of the Committee answered all the way from Brompton, he was delighted to learn how far the omnibuses had to go, and that but one seat in the vehicles would be filled. However painful it might be to him to move the resolution in his hand, he felt it a duty to propose it. When candidates under such circumstances forgot what was due to themselves and the profession, it was the business of such a Society as this to mark their conduct with severe reprobation, leaving it to Dr. Epps and the illustrious Dispensary Committee to advocate the conduct of such men.

Mr. HUNT seconded the motion, observing that it had long been known that talent had nothing to do with public medical appointments. It was for this reason that medical science had not kept pace in Great Britain with its progress on the Continent. (Carried unanimously.)

Dr. BIRKBECK here rose to speak, and was received with marks of esteem most hearty and sincere. His immediate object in rising was in the first place to express at this stage of the proceedings, the feelings with which he had heard the vote of thanks passed to himself and his late colleagues, and in the second, to reply to the charges urged by Dr. Epps. To this intent he spoke nearly as follows:—

It is impossible for me, Sir, to give utterance to all I have felt during the passing of the resolutions which have to-night occupied the attention of this candid, honourable, and intelligent body of gentlemen. I thank you most sincerely for the vote of thanks with which I have, in common with my late coadjutors, been honoured; but greatly as I value that vote, I think it insignificant indeed, when compared with the resolution which was carried just before it; for as all we have done has been performed in support of a great principle, so all that we hoped, contemplated, or could possibly care for, has been achieved in the passing of that resolution. If the observations which have this evening been directed against the character of the medical officers had seemed to influence any of the members of the Society, I should certainly have risen long ago. Facts, however, his statements were not, and whence they were derived, the Society cannot find it difficult to detect. He has drawn them from the Committee whom he defends. If, however, instead of making inquiries in that quarter, he had applied to the medical officers for information, he might have obtained a knowledge of circumstances which would have induced him materially to modify, if not altogether to suppress, his speech on this occasion. *(Great applause.)* It has been imputed to us as a fault, and a deviation from the paths of virtue, that we accepted the situations which we have just resigned by the aid of the very law which we now condemn. Sir, we derived no assistance from that law; we wholly repudiate the charge. As regards myself, Sir, I shall make this pretty plain when I state that had I chosen to take advantage of that law, I might have obtained office in the dispensary before Dr. Clutterbuck. But Sir, at that time I had not only never seen the law, but I certainly never should have agreed with, nor connived at it, had occasion occurred for me to do so. When I was elected my friends naturally said to me, "What expense will you incur?" to which I replied, "Just so much as is necessary to pay for the advertisements and circulars, and if more is necessary, to make governors, I will have nothing to do with it, for not one farthing shall be so expended by me." That Dr. Clutterbuck acted in the same manner I also know, and that Dr. Lambe and Mr. Pereira did so, I know. If those who have accused us of acting otherwise had come to us to learn the facts, they would have found that when we were elected there was no opposition, and that, consequently, there was no occasion to create pocket or money votes. *(Hear, hear, hear.)* When Drs.

Woodford and Roberts and the second Pereira joined the dispensary, they obtained precisely the same number of votes as they would have done had no such law existed. But, Sir, the moment it was in the power of Dr. Clutterbuck and myself to bring forward the subject of this law, we did so, and, as you may suppose, we were strengthened in this step by the unfortunate contest in which Mr. Salmon was engaged with Mr. Ellerby—with honour to those gentlemen, I assure you, notwithstanding what appears to be the impression of some gentlemen. It was on the occurrence of that scene of riot and confusion that we were particularly induced to attempt the introduction of a better law. We proposed that it should exclude all voters who had not subscribed for twelve months. But this was so strongly opposed, that at last we were obliged to compound for six months. We also extended the law to life-governors paying ten guineas, but this was considered by the governing committee to be so outrageous an endeavour to be virtuous, that we were obliged to abandon it, and it was therefore our misfortune, and not our fault, that we got an imperfect instead of a perfect law. No concealed, doubtful, hesitating, mysterious object actuated us in this measure. We were urged to it solely by a desire to amend a disreputable regulation, and it was neither more nor less than the simple reintroduction of that regulation that again brought us into the field. In this second attempt of the governors to establish pocket votes, they first proposed that a subscription of three days existence should constitute a voter, but at last they consented to extend it to seven days. We thought, however, that what could be done in three days might as readily be done in seven, so we resolutely resisted the law altogether, and determined to contend for the *principle* alone, whatever form of law it might assume. All other feelings, in fact, became as nothing to us when balanced against that. Our efforts, however, were vain. The modification from three days to seven, by some curious circumstance came into favour with the governors, and perceiving, as every man must, that in order to make our defence of a principle available we must insist upon retiring, we told the governors that so intimately did we consider our own respectablity, the utility of the institution, and the dignity of the profession, involved in that regulation, that we should feel it our duty to resign if we were not supported in our opposition to it. This procedure has been denounced as a threat, but surely we were at liberty, under the circumstances, to use it. The governors did not support us, the obnoxious law was adopted by a majority of 89 to 45, and we resigned. ("*Hear, hear, hear.*") Praise has been given to the Dispensary Committee for appointing a "medical committee" to decide on the qualifications of candidates for the medical offices. But a more worthless and absurd function could not belong to any body of gentlemen. Their duty amounted to nothing beyond that of examining bits of parchment, certificates, and various scraps of paper,—obtained from the Colleges of Physicians and Surgeons, and other sources,—which form no kind of defence against ignorance and incompetency. They do not in any way protect the institution against the inexperience of extreme youth, nor the want of professional knowledge, but if the candidates have "proofs" of "qualification" from the medical colleges, the medical committee is obliged to pronounce the individuals presenting them "efficient candidates," though at the very time they may know them to be wholly unequal to the duties of the office sought. Such an individual would once actually have been elected on the faith of his paper qualifications, had he not miscalculated by a few pounds the sum his rival was going to pay to secure votes. (Dr. Birkbeck here entered into some details relative to Drs. Clutterbuck, Woodford, and Roberts, which, as the accusations are not minutely given in our report, it would be useless to particularise; it will be sufficient to say that the reply was abundantly satisfactory to the meeting.) I will not intrude much longer on the patience of the Society. I can only assure you that we have endeavoured to act a strictly conscientious part. It was impossible for us to guard against all that was wrong in the institution, but the moment we saw a palpable and manifest corruption, we opposed it, though all that was wrong in the elections was not ascribable to the obnoxious law. If, however, by our opposition to it we have done something towards preventing the tide of corruption from rolling back upon the profession through even one channel,—and the temper of the times will not long let it roll through any channel—then I hope we have deserved the thanks which, with the noblest feelings, you have this evening voted us. I thank you with the greatest sincerity, and am deeply sensible of the kind, honourable, and handsome manner in which the vote has been passed. (The loudest demonstrations of applause followed the speech of the worthy physician, and the cries of "bravo" and clapping of hands were continued for a long period after he had resumed his seat.)

Dr. Roberts then presented himself, and in a brief and characteristic speech, returned thanks. He observed, with regard to his own election, that when the nephew of Dr. Clutterbuck retired from the dispensary, Dr. C. informed him (Dr. R.) and another physician of the fact that each might start fair if he meant to contest the election. If his rival did not come forward, it was no fault of him (Dr. R.), and he was elected without making a single vote, as was proved by the fewness of the names (ten) recorded in his favour. He might make an apology for his quotation from Cato, but nothing else could he have to regret. *(Applause.)*

Mr. Salmon said, that if he deserved the comments of Dr. Epps (to whom he was a total stranger) he should but ill merit the compliments he had received from the Society. He trusted, however, that he should show he had acted throughout upon principle. His first introduction to the dispensary was at the same time as Mr. Lloyd came forward, when he and Mr. L. were the only candidates. He at once called on Mr. L., told him that he would not lend himself to the money-vote law, if he could not come in by a canvass, and should therefore retire. At his second appearance, he refused any means but that of canvassing. His third was with a gentleman now dead (Mr. Ellerby), and of whom therefore it was painful to speak; but it had become necessary for him now to state, that he went at the onset to Mr. E., and said to him, "I am informed that you mean to make votes on this occasion. I am in a condition to do so too. If you make them, I will; and if, after having been a candidate already at two elections, I am, with such a claim, to be again opposed, I will pay 10,000*l.* sooner than withdraw." The facts of that election were now matter of history. Six hundred votes were made, and if he (Mr. S.) had been on friendly terms with the Committee, he should have obtained the office, though he made but 300 votes. When he did come in, it was after an honourable collision with his late colleague Mr. Coulson, on the simplest principles, with whom he agreed that no votes should be made. He had always been opposed to the virtual sale of medical appointments, and thought, if sold at all, it had better be by auction at Garraway's. The medical officers had all now resigned, and the smallest portion of reflection must convince all men, that no six individuals could thus combine to quit office, with any but good motives. He cordially thanked the Society for the honour they had done him, and trusted that no act of his life would ever afford reason for saying he had forfeited their esteem. *(Great applause.)*

Dr. Epps here expressed himself satisfied with the explanation which had been given by Drs. Birkbeck and Roberts, and, in some respects, with that of Mr. Salmon, but at the same time he thought that he (Dr. E.) was justified in his observation that Mr. Salmon had made governors in his contest with Mr. Ellerby. He admitted, however, that Mr. Salmon had not acted underhandedly in any of his contests, though he certainly had resorted to the obnoxious law. He did not mean to impute dishonourable conduct to Mr. Salmon. He had merely stated that the former proceedings of that gentleman did not entitle him to cordial thanks now. Mr. Salmon was before the Society as a public character, and though he had now explained how he came to make governors, he was a fair subject of comment. The fact of his (Dr. Epps) having the courage to stand up in opposition to almost the whole Society, must be a proof that he was not actuated by unworthy motives.

Mr. Gilbert Burnett moved that the present system of medical elections be brought by the Society before Parliament. (Seconded by Dr. Blicke.)

In the resolution placed in the hands of Mr. B. by the Committee under whose inspection the resolutions were drawn up, were inserted the words "amongst other grievances." These Mr. B. now omitted; therefore

Dr. Somerville rose and moved, that those words be included in the resolution.

Mr. Burnett objected strongly to the amendment, on the ground that the Society could petition Parliament on "other grievances," without pledging itself to do so in this resolution.

The amendment, however, was pressed by Dr. Somerville, when Mr. Burnett found himself in a minority of 4.

Dr. Jewell thought that thanks were due to Dr. Gregory for bringing the subject forward to-night; because many gentlemen of the Society had been prevented from attending the Freemasons Tavern. The profession laboured under an accusation of apathy to their own interests, but the proceedings of the Society would show that the spirit of medical reform strongly prevailed. He moved the thanks of the Society to those gentlemen in the country who had publicly taken up the cause of the ex-medical officers. (Seconded by Dr. Crane, and carried unanimously.)

Mr. Stoppart, the secretary, moved the signing of the resolutions by the chair-

man, and their advertisement in the public journals. Carried.

The CHAIRMAN assented, observing that he believed this meeting would do great good, and would let the public know what the profession felt on the subject. Medical reform would shortly be discussed in Parliament, and in that Society, when he sincerely hoped (amongst other things) that no antiquated notions in favour of old and injurious medical laws would be allowed to stand in the way of that reform which the wants of the profession and the interests of science demanded. (Hear, hear, hear.)

The business of the evening was then concluded with an announcement that Dr. Gregory and Mr. Burnett were elected the new presidents, and the meeting separated shortly before 12 o'clock.

The following are the resolutions in full as carried:—

1. "That in the opinion of this Society, the interests of the sick poor and the respectability of the medical profession equally require that the appointments to public charities should be free from even the suspicion of being open to purchase.

2. "That in the opinion of this Society, the regulation lately adopted by the governors of the General Dispensary, Aldersgate-Street, permitting any person to attend and vote personally who should become a governor seven days prior to the election, amounts virtually to the sale of the professional appointments.

3. "That the cordial thanks of the Westminster Medical Society are due, and are hereby given, to Drs. Birkbeck, Clutterbuck, Lambe, and Roberts, also to Messrs. Salmon and Coulson, for their noble and disinterested conduct in resigning their offices, rather than tacitly assent to the introduction of a law which compromises the honour and independence of the medical profession.

4. "That the most respectful thanks of this Society be tendered to his Royal Highness the Duke of Sussex, for his liberal and enlightened conduct in retiring from the Presidency of the General Dispensary, Aldersgate-Street, thereby marking the sense his Royal Highness entertains, of the conduct of the medical officers in resisting the adoption of a most obnoxious and pernicious regulation.

5. "That in the opinion of this Society, any physician or surgeon who shall avail himself of such a law, and thus virtually purchase a professional appointment in any public charity, forfeits thereby his claim to the respect of his professional brethren.

6. "That the Society pledges itself to bring this, amongst other grievances, before such committee as shall be appointed by the House of Commons to inquire into the practice and regulations of the medical profession.

7. "That the thanks of this Society are justly due, and are hereby given, to the Medical Practitioners of Sheffield, Cork, Nottingham, and other provincial towns, for their readiness to stand forward in support of the dignity of the medical profession.

8. "That these resolutions be signed by the Chairman, in behalf of the Society, and that they be inserted in the several medical journals, and following daily papers: Times, Herald, Chronicle, Globe, and Standard."

(Signed) T. J. Pettigrew, Chairman.
Edward Stodart, Sec.

THE LANCET.

London, Saturday, November 2, 1833.

THE difficulty of improving any department of our social system arises, not so much from the nature of the undertaking as from the moral obstacles by which attempts to amend are usually opposed. We are all furnished, and almost equally, with competent faculties for the discovery and rectification of error; but various causes impede the practical operation of our judgment. Two, undoubtedly, of the most prejudicial of these preventives to improvement may be discovered in those odious diseases of the mind denominated "avarice," and "party spirit," which mental maladies, under a Protean variety of forms, have been, more particularly in England, Ireland, and Scotland, the worst enemies of mankind. Most of those changes in our present circumstances, which are now felt and acknowledged to be useful by all, have been resisted with obstinacy for years, and ultimately received with reluctance by those evil powers,—those baneful ascendants of the human mind. In consequence of their malignant influence, almost every effort to render our institutions more beneficial to society, has been treated with positive hostility or contemptuous neglect. Whoever presumed to suggest alterations in our state, was treated as a visionary; or his motives and his character were made themes of animadversion and misrepresentation, while the validity of his arguments and the utility of his designs were left untouched. "Whence comes the advice?" was the melancholy self-interrogatory with men on those occasions which, for ages, suspended the adoption of the most splendid plans of amelioration in the nicely-balanced scales of party contention.

To remain still, in fact, was assumed as the standard of wisdom; so much so, indeed, that the worship of the god Terminus would seem to have again seized on the minds of men, who deemed it an act of profane officiousness to propose the removal of those absurd landmarks in our social condition, which so long obstructed the progress of improvement. Through the agency of this disastrous principle of conduct, nation was pitted against nation, province against province; and war, misery, and ignorance, with all their fatal accompaniments, were the results. The great and beneficent view of human affairs, which teaches us that the general welfare of mankind was identical with, and necessarily included, individual interests, was merged in the discordant operations of this pernicious dogma: even Heaven itself would seem to have failed of establishing the great truth, that men were members of one family, whose common good was to be effectuated, if not by an actual accordance of action and opinion, at least by charity, toleration, and respect for each other.

Philanthropy,—without a consideration of which we are liable to err at every step, in ordinances affecting even but a small portion of a community,—has long been a dead-letter with legislators and statesmen, as well as with all those who have imitated them on a small scale; and yet we cannot injure one point without weakening the whole arch on which the general good of mankind depends.

If we narrow our view from the great theatre of discord among men to the minor institutions included in its vortex, we shall find them partaking of the same spirit, and actuated by the same vicious impulses, as their reckless prototype. Even in institutions, the very objects of which, it might have been expected, would have set those who presided over them in the right path of proceeding, the predominant feeling of self and partisanship prevailed over circumstances favourable to the elicitation of truth, and for a length of time completely stifled its voice. The lamp of science, indeed, fed and cherished by individual hands, burned on through the surrounding gloom, for the benefit of mankind; but it appears to have failed in shedding a single ray on those corporate bodies which were more immediately destined for the diffusion of its light. The conduct of such bodies presents an anomaly in the history of human events, explicable on grounds which it would be more agreeable to suppress, if their discussion were not necessary to the prevention of errors of a similar kind. In the lecture-room and the council-chamber, the "Rulers" have exhibited contrasts of character, palpable as light and darkness in the same picture. In the former they discharged, generally with efficiency and zeal, the duties of expounders of arts and sciences, dignifying in themselves, and of the utmost importance to society; in the latter they allowed themselves to be borne away by influences of a tendency entirely opposed to the dissemination of knowledge and truth. From their avocations we should naturally look to them for the calm and unalloyed exercise of reason, and in the management of the institutions over which they preside, expect the repose of rectitude of intention, though the storm of passion and the clashing of petty interests raged without. The order and objects of the profession in which they are engaged, might have suggested the advantages of system and agreement among themselves, and raised them to a perception of the truth, that they ought to act for themselves, only in connexion with the welfare of society. But instead of being instructed on these points by the nature of their avocations, to overreach each other in the sale of *degrees*, *licenses*, and the pretended *qualifications* for them, would

appear to be the principal feature in the mercenary interruptions of their loved repose. In our medical corporations we can discern no traces of union, concert, or a well-digested design for the improvement of medical education, and for facilitating the reduction of its objects into practice. The influence which those bodies possess is exercised with far different views, and contempt and dislike are thus insidiously disseminated throughout the members of the profession in the three countries. The low and envious jars of scandal are not only employed for this unworthy end, but positive laws have been enacted for the purpose of lowering the value of the degrees of certain establishments, by preventing their graduates and licentiates from earning their bread. Directly and indirectly, indeed, every effort to create disunion among the various grades of the profession in these countries has been resorted to by those persons who have an interest in propagating delusions of this kind, and to whom it was an object to preserve the old system inviolate. The views of such men may be easily understood.

But while these deluded slaves of monopoly imagined that they were safely moored, an unperceived current was silently bearing them on to the point where their dreams of security were to be dispelled for ever. All was changing around them, and yet no note was taken of the progress of events which were daily altering the state of society and of science. The gradual improvement of the human mind, a necessary deduction from the constitution of the mind itself, as well as from the history of its operations, scarcely awakened their attention, though aided by the obvious fact, that almost every day was crowned by some new discovery or invention. The story of their own beautiful but slighted art might have led them to this salutary conclusion, if all other warnings had been absent on this important point: they might have observed it enlarging, expanding, accumulating, by slow but certain increments, until its arrival at the magnitude and perfection of its appearance in their own times, might readily have suggested the idea, that there was required some more liberal and unfettered institutions for its cultivation, than the "Colleges and Halls" in which they would have it confined.

The statute books of Oxford, of Cambridge, of Dublin, of Edinburgh, and of all their successors and imitators, were to be as immutable as the halls in which they were deposited: the pen of improvement was neither to profane their pages by erasure nor addition, except for a purpose foreign to the true interests of the medical sciences. But whether the doctrine we have been describing be longer maintained or not, is now a question of comparative indifference: the elements of society are so completely altered, that the supporters of our ancient establishments must find themselves in a new position indeed, on counting their numbers, and calculating their strength. A new agent has appeared on the stage, under whose influence,—opinions, institutions, in short all parts of our social system, are undergoing alterations of a most salutary character. Concession to this new power should no longer be considered as a sign of inconsistency, or an abandonment of previously cherished views, which, being no longer reducible to practice, in consequence of a new order of things, may be laid aside without loss or reproach. The holders of such opinions may still have many opportunities of using them as checks to those excesses which opposite principles might produce; but, to resist the supremacy of a power which has extorted the admission that every part of our constitution requires to be regenerated, would, we think, be as unavailing as it

would be impolitic in any body of men who mean to continue their connexion with society, and to take an active part in its concerns.

These general observations on the obstacles which have obstructed the march of improvement in our medical corporations, have been elicited in consequence of perusing a pamphlet recently published, entitled "Thoughts on Medical Reform, by a Retired Practitioner." * In this pamphlet the subject of medical abuses is discussed with marked liberality of feeling; and the highly intelligent author has evidently bestowed much attention on the inquiry. As we have been led to understand that several influential members of the Government concur in the opinions of this certainly able writer, we shall comment at greater length than the space now at our disposal will permit, on the suggestions which we have thrown out for the improvement of the medical faculty, and in adopting this course, we shall feel it to be our duty to place the views contained in the pamphlet, fairly before the medical public. The time has now arrived when the question of Medical Reform must be discussed, or rather, we should say, in relation to the pages of THE LANCET, re-discussed, in all its important bearings.

ROYAL DISPENSARY FOR DISEASES OF THE EAR, SOHO-SQUARE.

A PERSON named OWEN REARDON complains bitterly of the treatment he has experienced at this institution. He says that after attending it a long time without deriving any advantage, he was promised, by Mr. CURTIS, the "advice" of Sir HENRY HALFORD and other parties, but that, instead of receiving such assistance, he was insulted, and, finally, requested to sign a paper, which was to be forwarded to the governor by whom he had been recommended, alleging that he was discharged from the dispensary for "impropriety of conduct."

It is quite clear that OWEN REARDON did not sustain a very severe loss through not receiving the "advice" of Sir HENRY HALFORD.

Of course we cannot know anything of the circumstances, except from the statement of our correspondent, and we might have refrained from noticing the case at all, had it been the *first* complaint which has been forwarded to us by individuals who have been patients at this institution.

"RAISING THE WIND;"

A New but Expensive Farce recently performed at St. George's Hospital.

THE utmost consternation has been excited amongst the members of the *Ventilation Committee* of this hospital, in consequence of the total failure of the experiments which were instituted in order to furnish the wards with a constant stream of fresh air. It is reported that this lamentable failure has cost the institution no less a sum than *one thousand five hundred pounds*.

As it does not appear possible for the members of the Committee to furnish anything like a satisfactory explanation to the Governors of the hospitals, they have, we understand, determined to preserve an undisturbed silence. We certainly should like to see a *copy of the account*, and it would afford us equal satisfaction to have the opinion of Mr. MAHOGANY on this whispered experimental expenditure of the funds of a *charity*.

Tabulæ Arteriarum Corporis Humani. By FREDERICK TIEDEMANN. Schloss. London. Size of Life.

THESE brilliant and accurate engravings of the arteries of the human body are too well known, and too generally appreciated, to require from us one word in commendation of their extraordinary me-

* 8vo. pp. 33. B. Fellowes, Ludgate Street.

rits and value. We have merely, therefore, to state, that Mr. Schloss, the indefatigable foreign bookseller, in consequence of an arrangement which he has been enabled to make with the original publisher at Carlsruhe, can dispose of these beautiful tables at a trifle more than one-half of the cost at which they were first published. The charge was then twelve guineas, whereas the four immense fasciculi may be now purchased for seven.

MR. SCOTT AND THE PERPETUAL PUPILS OF THE LONDON HOSPITAL.—NOTE FROM MR. BIRTWHISTLE.

To the Editor of THE LANCET.

SIR,—I never had any wish to shield myself under an anonymous cognomen, and I therefore acknowledge myself the writer of the note signed "Londinensis," as well as the communicator of the statements respecting Mr. Scott, inserted in No. 526 of THE LANCET, under the "London Hospital School." Since those publications I have seen and conversed with Mr. Scott, to whom and to others connected with the hospital, I have avowed myself the author. I now lose not a moment in stating my belief that Mr. Scott never did inveigh against the "old students" in the manner imputed to him, and that the report so current in the hospital has originated in error. Whilst I disclaim anything like personal feeling to Mr. Scott, I am obliged to say that all the misunderstandings with the surgical class have arisen from his not having, when he succeeded to the surgical chair on the demise of Mr. Headington, properly acknowledged the pupils who had taken perpetual tickets from that gentleman. I am aware that Mr. Scott did issue what I would designate "courtesy tickets" to those few pupils who wished for them; but, I would ask, what man of independent feelings would accept as a favour what he had liberally paid for, and which was, in my humble opinion, his undoubted right? Messrs. Little and Bennett, the two gentlemen who got up the late meeting, told me yesterday that Mr. Scott did now admit that they had a moral but not a legal right, a conclusion which I think requires some explanation. As, however, I am desirous that this subject should be brought to a close—at least as far as I am concerned—I shall content myself with briefly recapitulating Mr. Headington's opinion when I entered to him. From some observations he made, I asked him, in the event of his resigning the chair (he was then in bad health and complaining) or any other unforeseen occurrence taking place, if I should be "perpetual" to his successor. His reply was—"To be sure you will. You don't enter to me, but to the school, and so long as lectures are given you have a right to attend when you please."—I remain, Sir, yours obediently,

JOHN BIRTWHISTLE,
Member of the Royal College of Surgeons, London.

Mile-End Road, Oct. 28, 1833.

THE LINEN-DRAPER DOCTOR.

To the Editor of THE LANCET.

SIR,—Do, pray, allow me to ask you who is "Doctor Oswald C. Wood," the pompously-announced third candidate for the HONOURABLE office of physician to the Aldersgate Street Dispensary? Is it the little man who lives at the *corner* of Brompton-crescent? Why, I venture to swear that a guinea fee would be to him a most desirable fee. (Once, I know, he walked a mile and took half-a-guinea.) His name *does not* figure in the list either of Licentiates or Members of the College. How is *he* to be *qualified* for the new situation? Good heavens! what a man to succeed those veterans in the profession—Clutterbuck and Birkbeck! When his education is really finished, how recondite and sterling will be his clinic in Aldersgate-street!

And who, also, is Mr. Herring, the man who wishes to dispose of honorary appointments as he sells jalap in his shop? Is this the Mr. Herring who supplies me and a great many other general practitioners with drugs? If so it is quite time we balanced our accounts, and—. There are many who can supply as good drugs as Mr. Herring, at the same price.—Waiting your answer, I am, your friend,

INQUISITOR.

P.S. Now that I am in the humour for asking questions, I have a mighty desire to know who was that gentleman at St. Bartholomew's, who, some time since, you know, pocketed a guinea from a patient in the ward as a fee for advice.

LONDON HOSPITAL.

REMOVAL OF A LARGE TUMOUR FROM THE NECK, BY MR. SCOTT.—HEMORRHAGE.—DEATH.

—— Barnes, aged 14, was admitted into Sophia's Ward, in consequence of a large tumour on the side of the neck. She was an out-patient six months ago with the same disease, and was then recommended to go to the Sea-Bathing Infirmary at Margate. She returned some time ago, as the tumour had made considerable progress, and now came to the hospital for the purpose of having it removed. The tumour extended upwards behind the right ear, and downwards to the clavicle; a portion of it also passed forwards, so as to nearly touch the larynx and upper part of the trachea; it also extended backwards, apparently as far as the trapezius muscle. The margin of the sterno-cleido-mastoideus muscle could be readily felt, and passed over the tumour. The pulsation of the carotid was not discernible, either above or below the mass, or in any part of the neck on the side affected. The tumour gave the sensation of a mass of scrofulous matter, and was easily moved about. In consequence of the rapid advancement of the disease, Mr. Scott informed the mother of the child, that the only chance of alleviation would be found in an operation, but that certain difficulties attended that proceeding. She stated, however, that the child would rather have it removed, than suffer the pain she endured.

The operation was accordingly performed, and in the following manner:—An incision was carried from the upper part of the tumour downwards, towards the clavicle, rather behind its centre. The skin was dissected backwards with some difficulty, as it adhered strongly to the diseased mass. In effecting this separation, hemorrhage of some extent occurred, partly from arterial branches, but principally from some large veins, which were divided as they passed into the substance of the tumour. An incision was there made from the middle of the former cut, obliquely downwards and inwards, towards the mesial line. By this incision the sterno-cleido mastoideus muscle, which had already been laid bare, was divided, and the flaps thus made were carefully dissected back. Mr. Scott then proceeded to detach the tumour from its adhesions underneath, at the upper part.

He first used a common scalpel; afterwards a blunt silver knife to prevent untoward occurrences. In this manner he effected the separation from the parts beneath. Some blood was lost from large veins which were with difficulty secured, after which, however, an oozing of venous blood still took place to some extent, but not sufficient to produce any sensible effect upon the pulse. The tumour was now raised from the inside, and the operator cautiously examined the part to ascertain the position of the carotid artery. This was found to pass directly under the tumour, throughout a large portion of its extent, and was firmly adherent thereto. It was thought prudent under these circumstances to pass a ligature round the artery, as it would necessarily be bared for a great distance. A very large vein was now secured with a double ligature and divided. The patient continued to lose blood from the vicinity of the larynx; the hemorrhage, though not alarming, was restrained, with difficulty, by sponges.

Mr. Scott now finding the girl becoming exhausted, endeavoured forthwith to remove the tumour with his fingers, when the mass gave way in some parts, and a large quantity of cheesy scrofulous matter was evacuated. He then detached the lower part of the tumour, using his fingers only to prevent accidents, but as the soft substance came away, an enormous quantity of blood poured out from a great vein, at its termination in the subclavian. This vein was enveloped in the mass, which had been evidently softened by disease, proved to be the jugular. It was immediately seized with a pair of forceps, but (in consequence of its situation close beneath the clavicle) was secured only with the greatest difficulty.

This last hemorrhage produced vast depression in the patient, and although little blood was lost after the last vein was secured, enough had escaped to threaten a fatal result. She was, therefore, at once removed to a warm bed, and blood to the amount of eight or ten ounces was injected into the vein of the arm, by the operation of transfusion. Brandy and water were injected also by the anus. However, little or no effect was produced by this, and she died in less than three-quarters of an hour after the operation.

After her death, the *nurse* discovered an enlargement of the right mamma, which, on examination, appears to have been affected with a similar disease. The tumour is altogether of a scrofulous character, and in some parts is found to have softened down to a substance analogous to that commonly found in parts affected with medullary sarcoma. A large vein traverses the tumour in its long axis, the rupture of which, close to the subclavian, occasioned the fatal hemorrhage.

Mr. Wardrop, on the abstraction of blood, next week.